

(12) UK Patent Application (19) GB (11) 2 232 089 (13) A

(43) Date of A publication 05.12.1990

(21) Application No 8912301.2

(22) Date of filing 27.05.1989

(71) Applicant
Chun-Chia Liu
1F, No. 6, Alley 2, Lane 32, Chin-Hua St., Taipei,
Taiwan

(72) Inventor
Chun-Chia Liu

(74) Agent and/or Address for Service
P R Wharton & Co
Alliance House, 29/31 Kirkgate, Bradford, BD1 1QB,
United Kingdom

(51) INT CL⁶
A63B 21/00

(52) UK CL (Edition K)
A6M M8X

(56) Documents cited
GB 0360041 A EP 0167367 A2 WO 86/02848 A1
US 4598908 A US 4319747 A

(58) Field of search
UK CL (Edition J) A6M
INT CL⁶ A63B

(54) Multipurpose physical conditioning apparatus

(57) A multipurpose physical conditioning apparatus includes a combination of: a sitting and lying mechanism (1) compressing mattresses 11, 12, 13 and adapted to be positioned on the floor for performing exercises in various positions; a first muscle-exercising device (2) composed of a plurality of first operating members (25, 26) and weight members (285) pivotally installed at a front portion of the sitting and lying mechanism (1) for performing various exercises therewith; a second muscle-exercising device (3) with a pair of second operating members (30, 31) and weight pieces (192) symmetrically disposed at the opposing sides of mechanism (1) for doing balanced exercises therewith; and a third muscle-exercise device (4) with a mounting arrangement (40) and a third operating member (50) pivotally installed at a rear end of the mechanism (1) for performing leg and back exercises; whereby, a user can perform various muscle exercises in different positions to improve the physical condition of his/her entire body with great convenience and security.

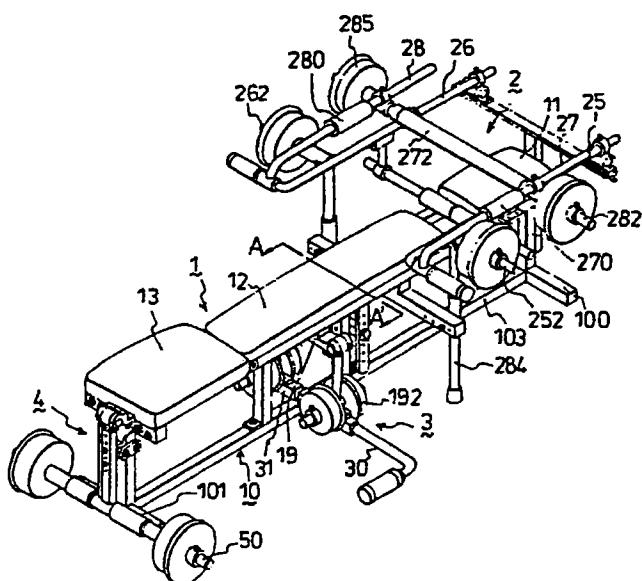


FIG. 1

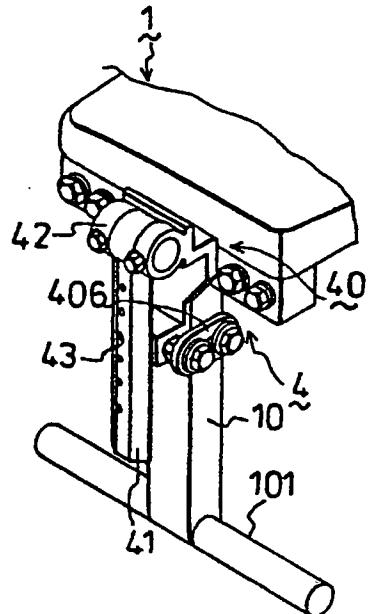
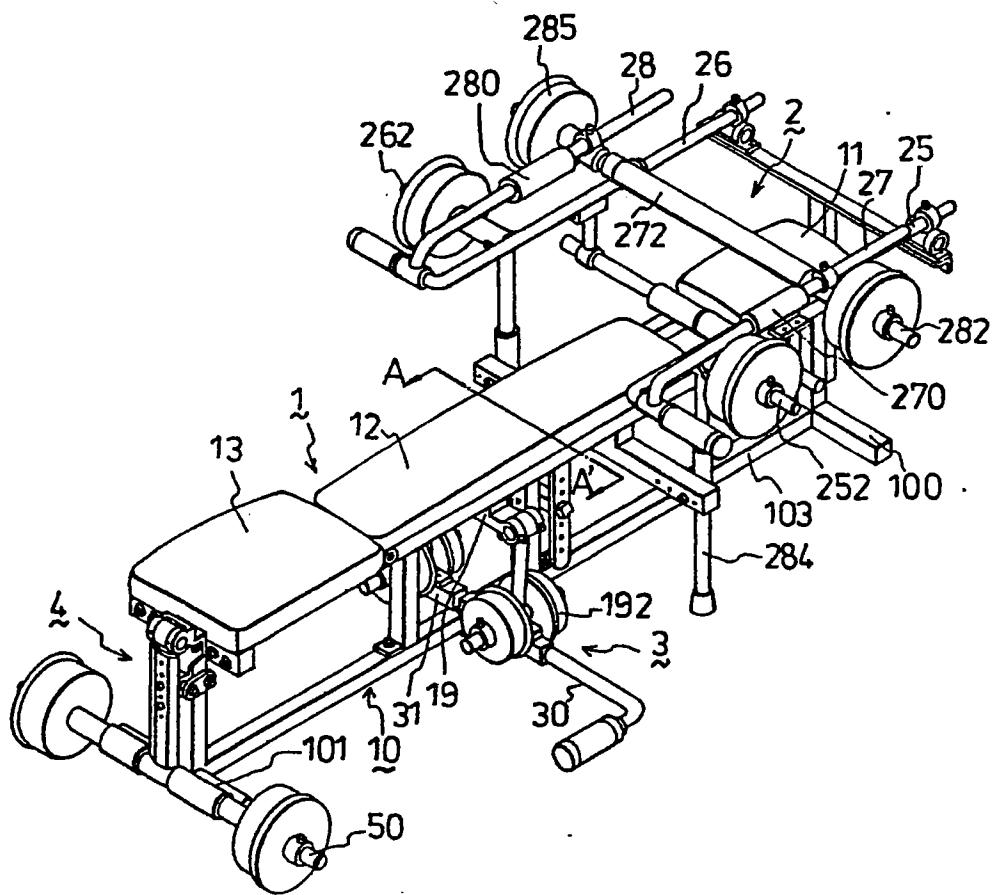
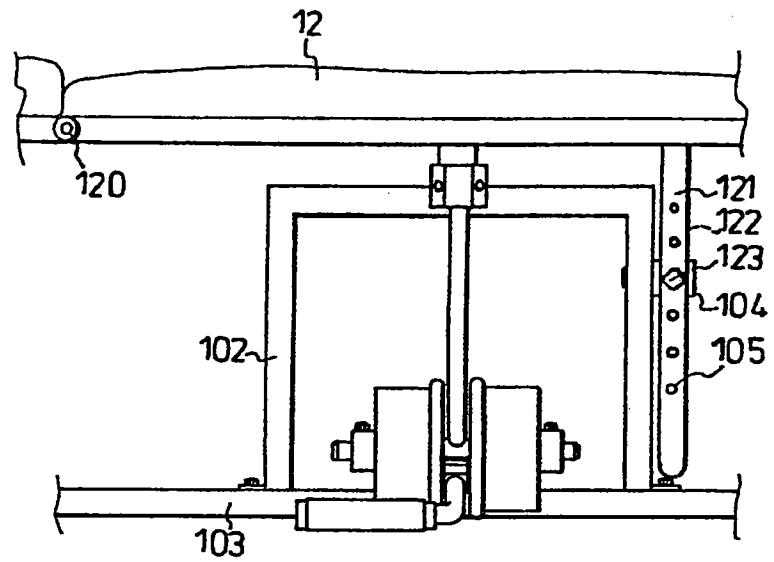


FIG. 10

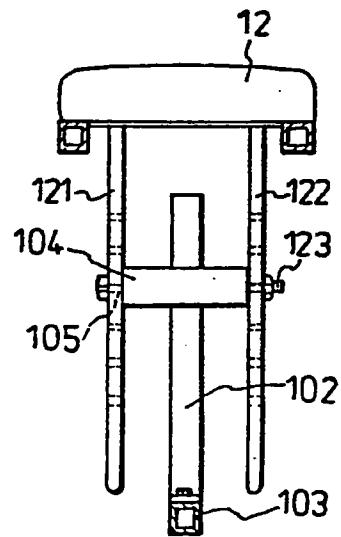
GB 2 232 089 A



F I G. 1



F I G. 2



F I G. 3
(A - A')

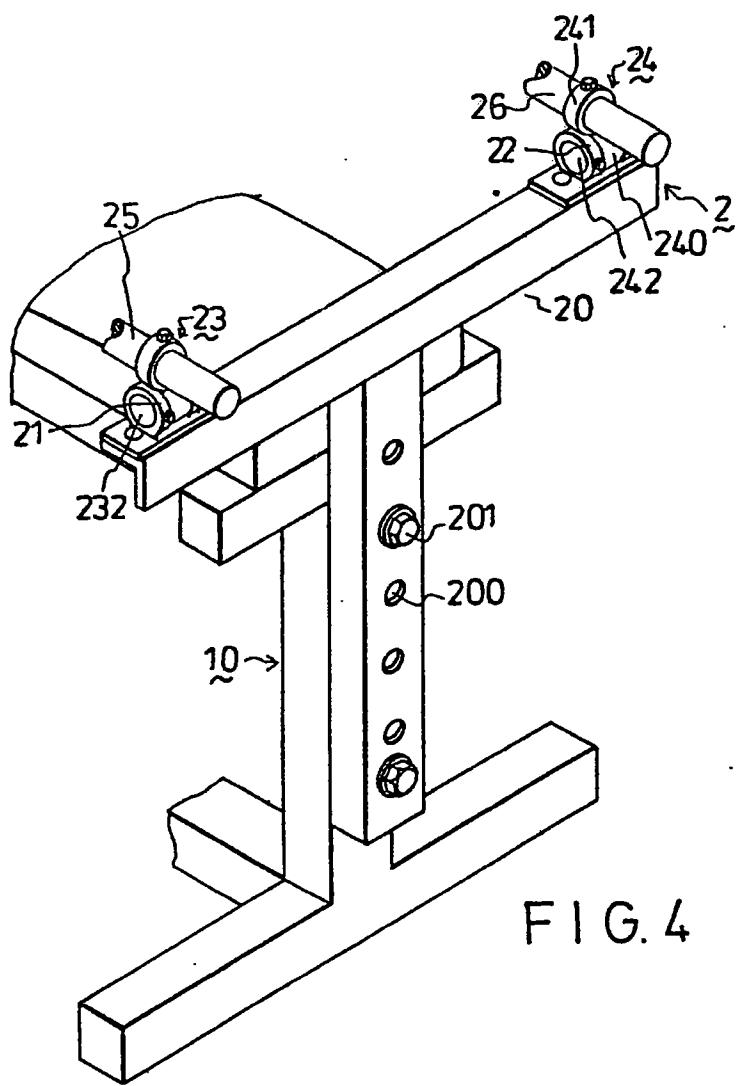


FIG. 4

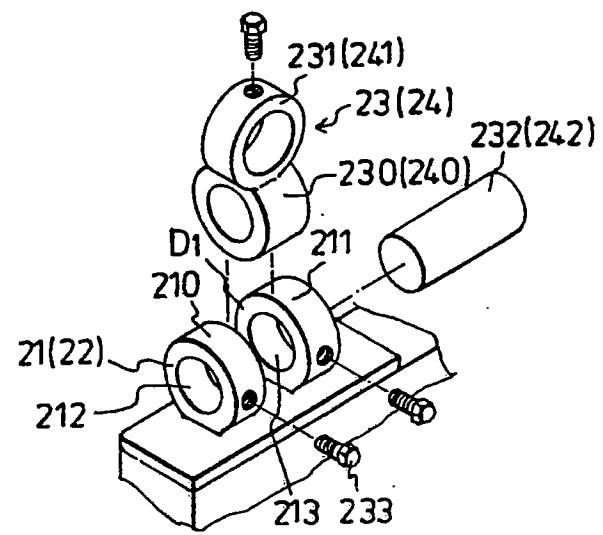
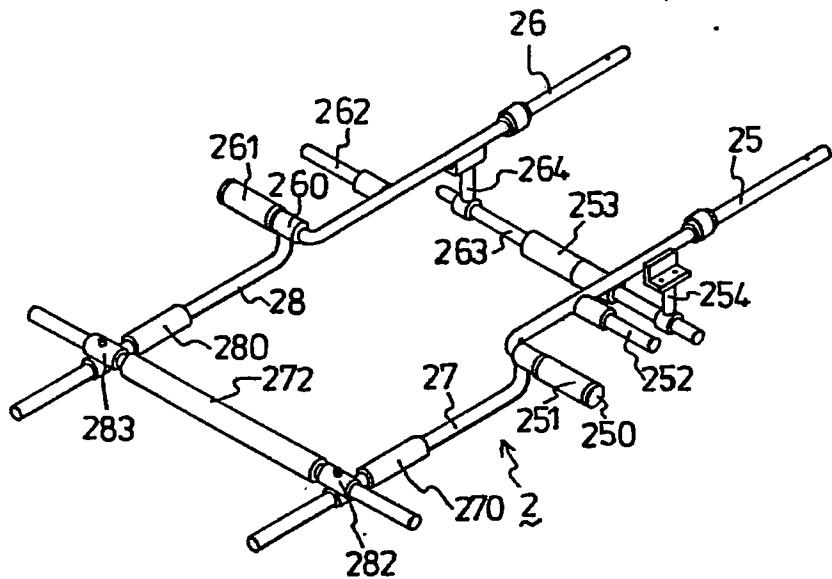
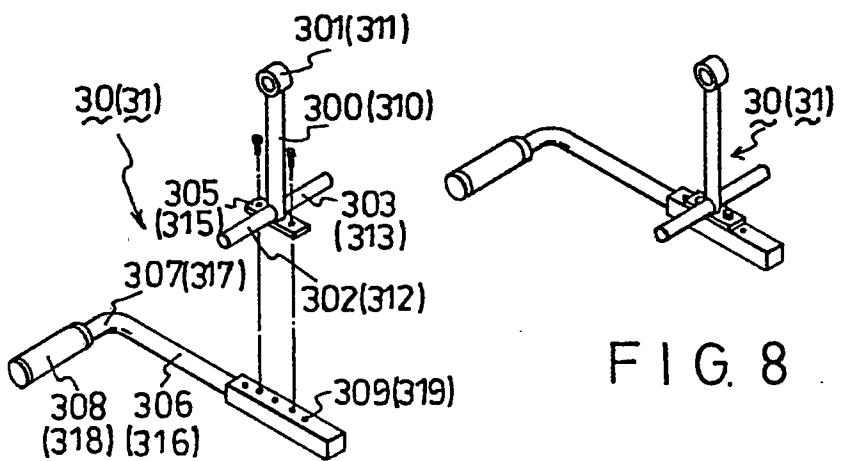


FIG. 5



F I G. 6



F I G. 8

F I G. 7

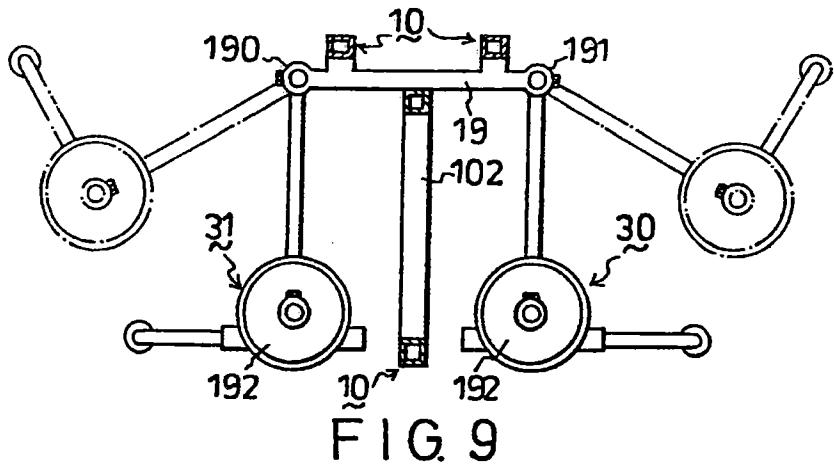


FIG. 9

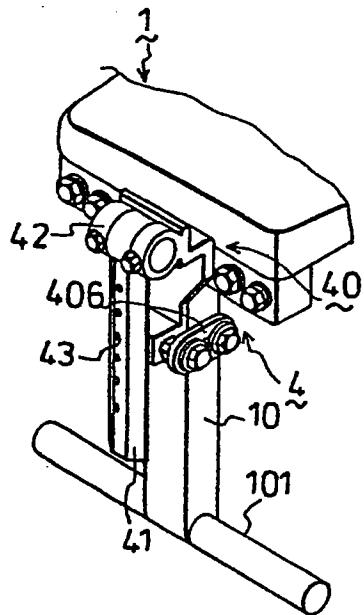


FIG. 10

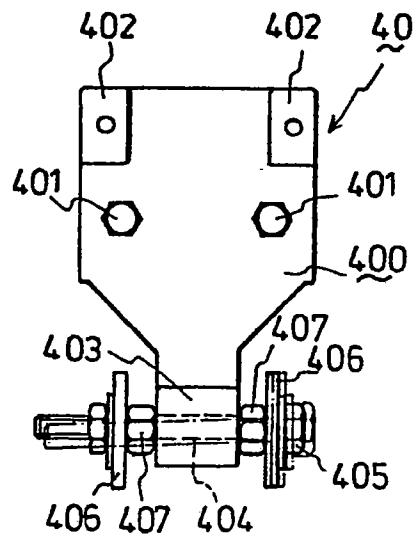


FIG. 11

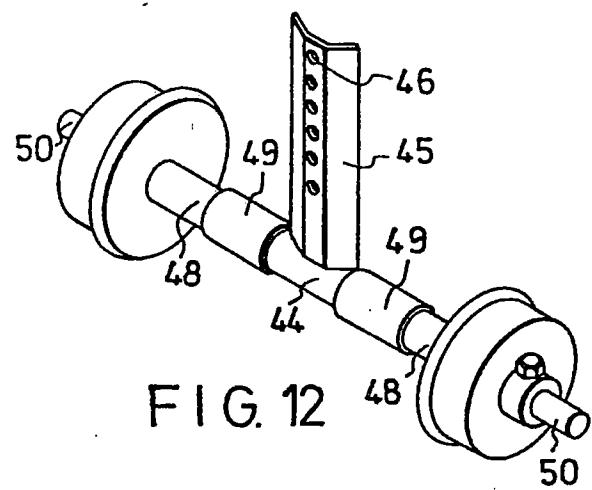


FIG. 12

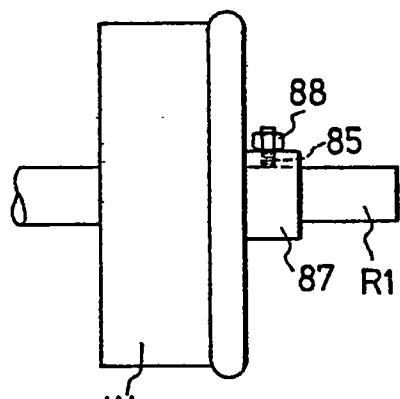


FIG. 13

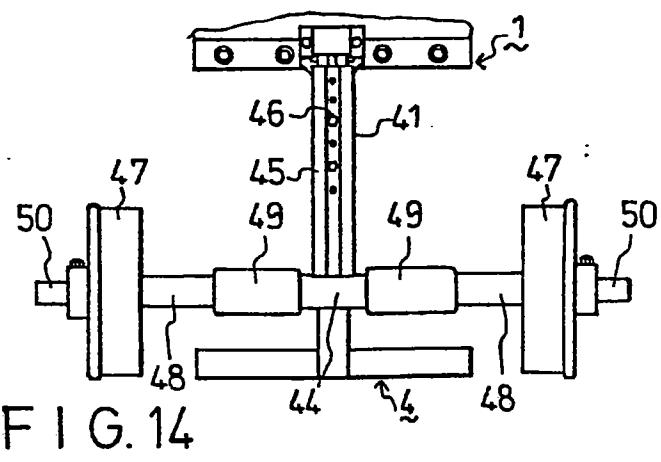


FIG. 14

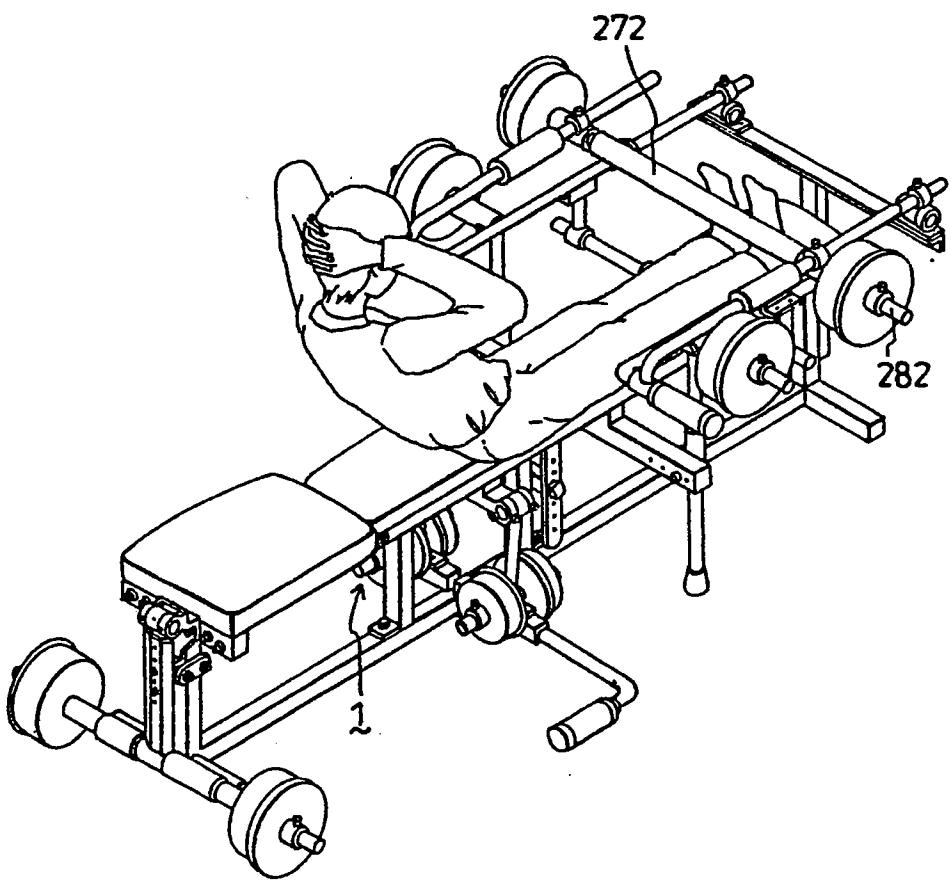
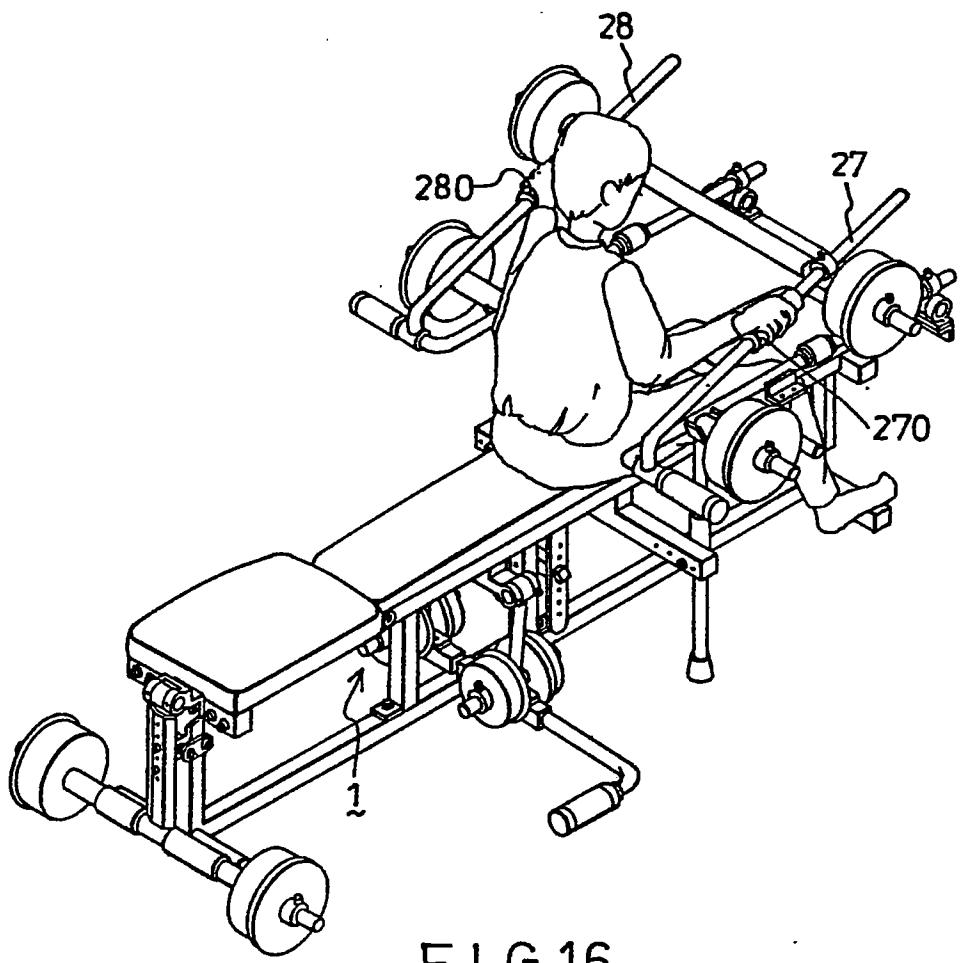
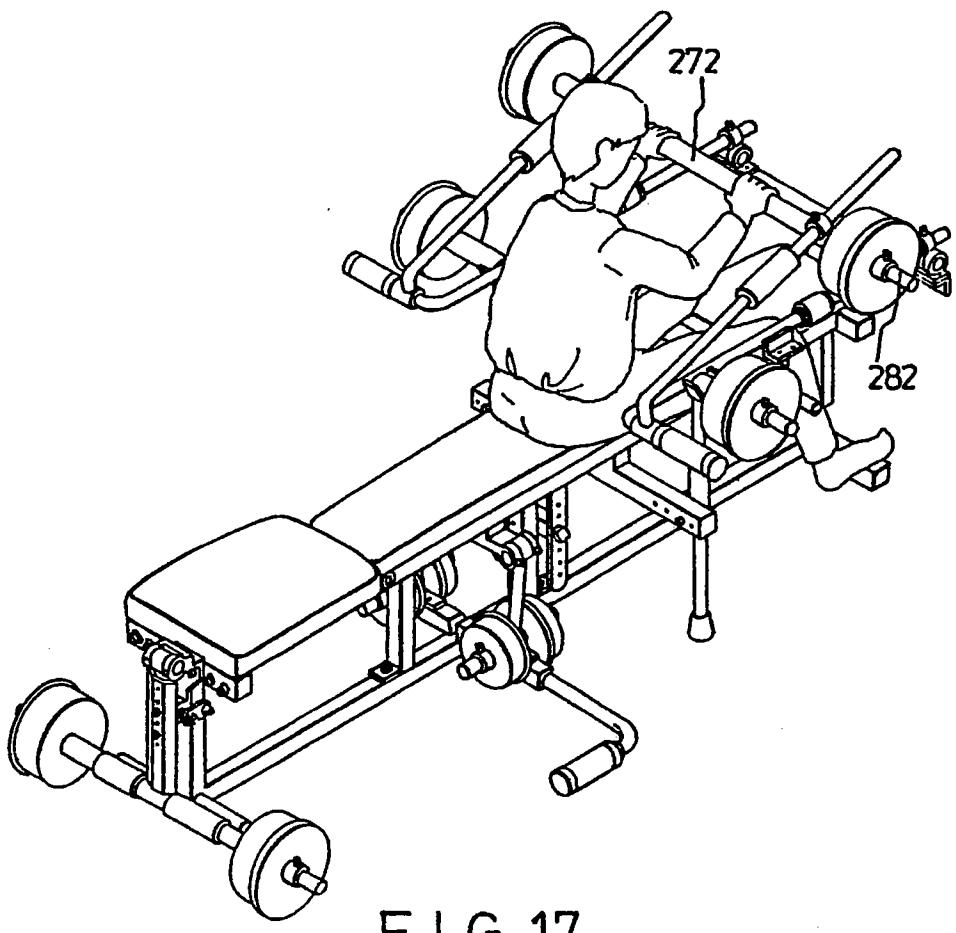


FIG. 15



F I G.16



F I G. 17

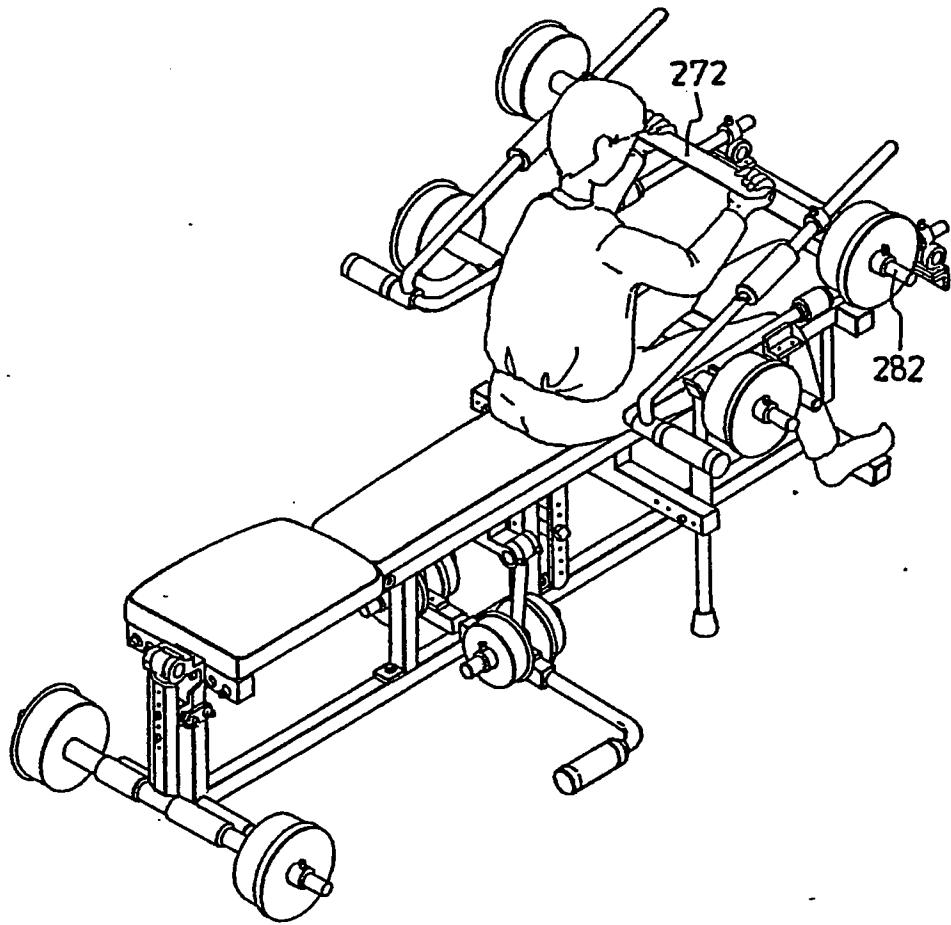


FIG. 18

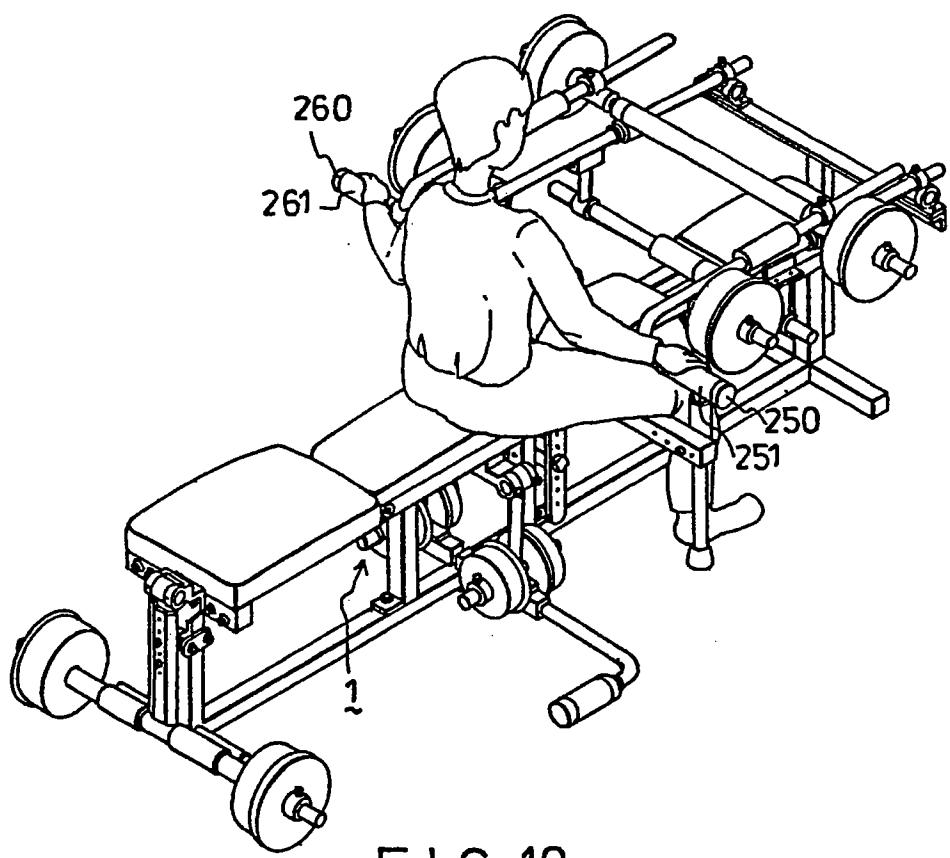


FIG. 19

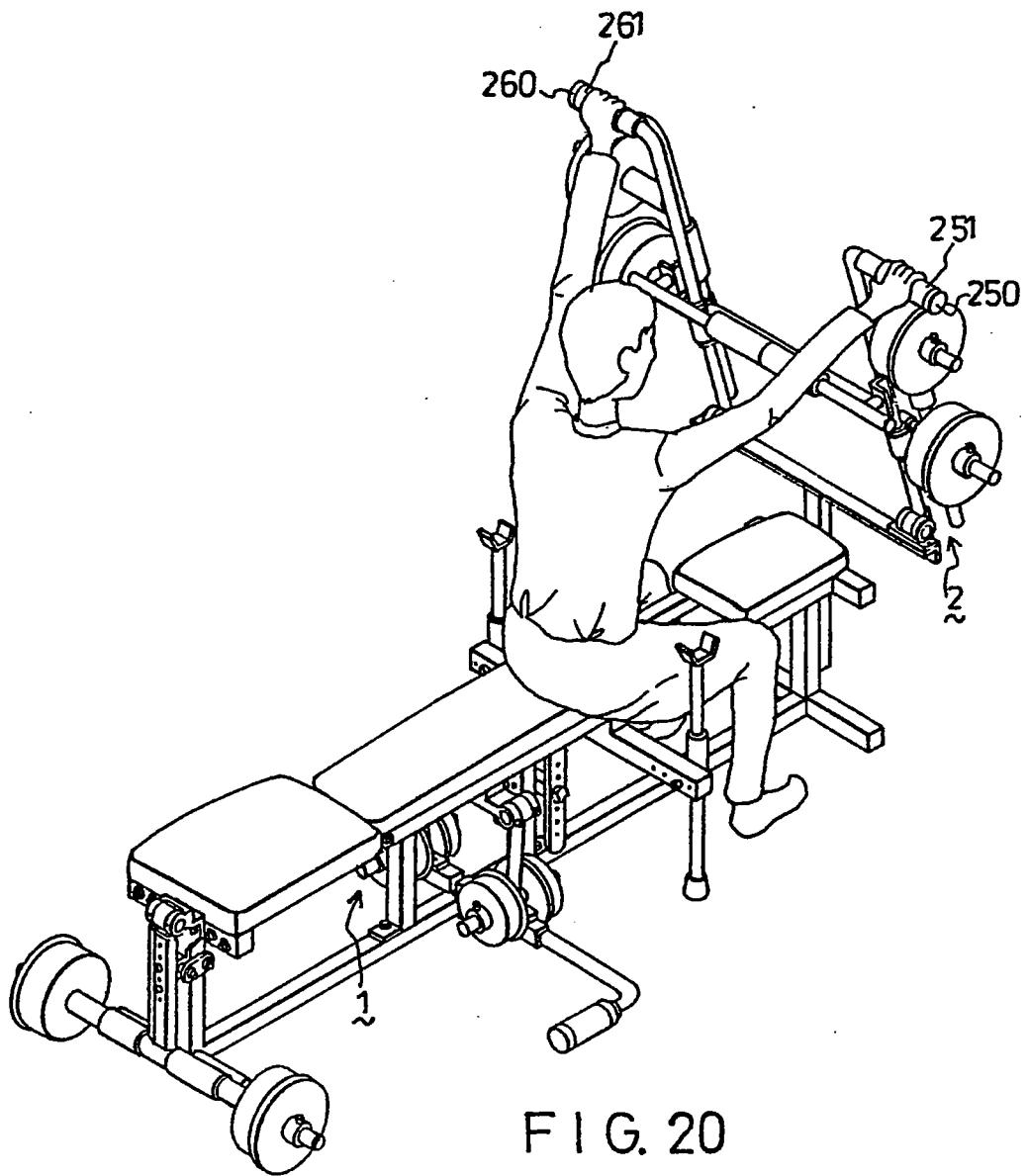


FIG. 20

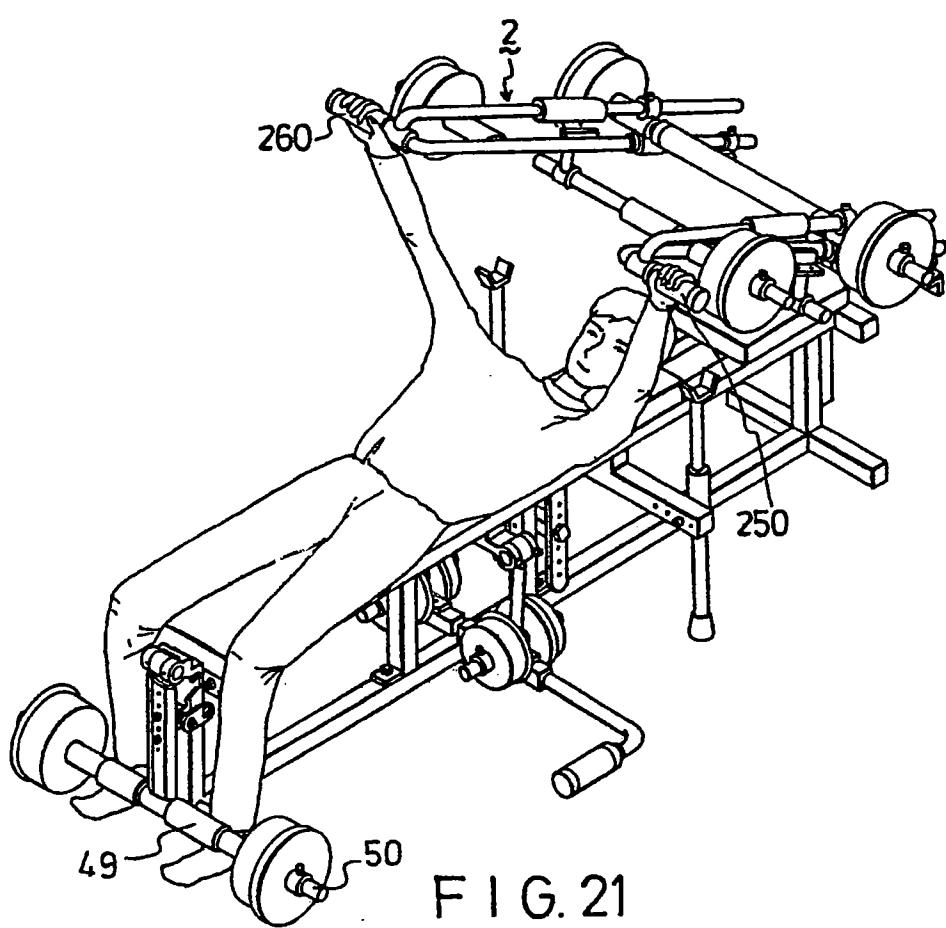


FIG. 21

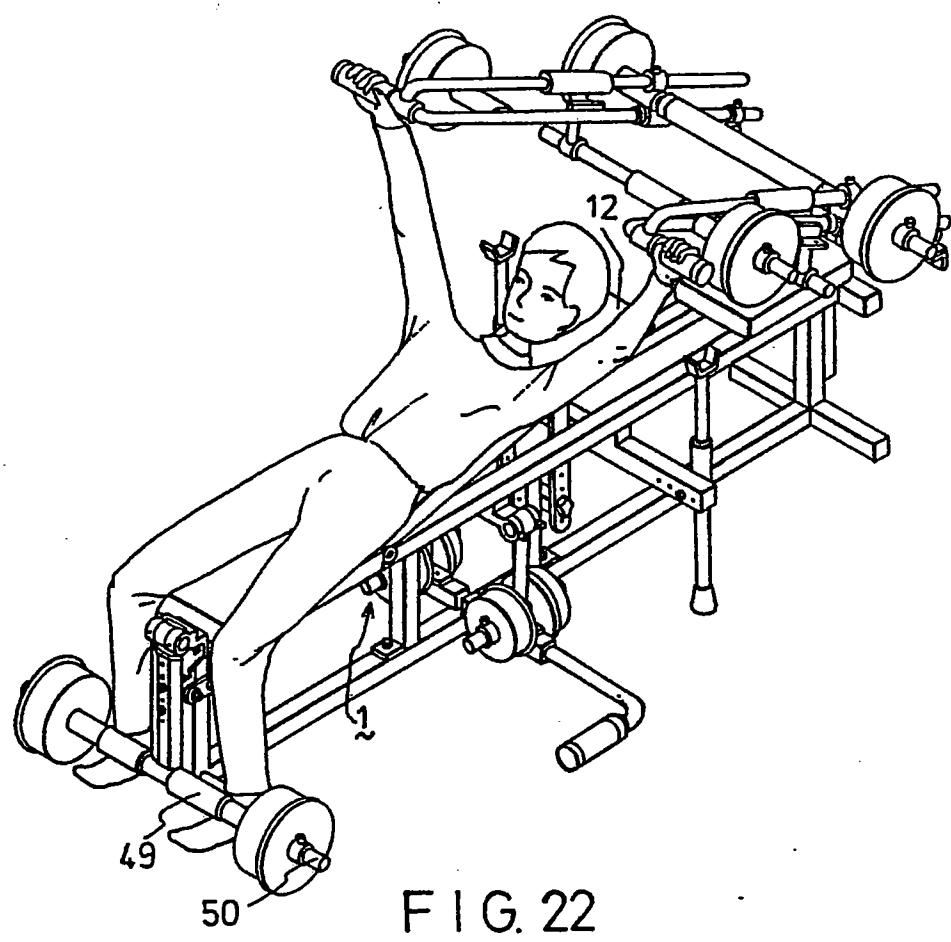


FIG. 22

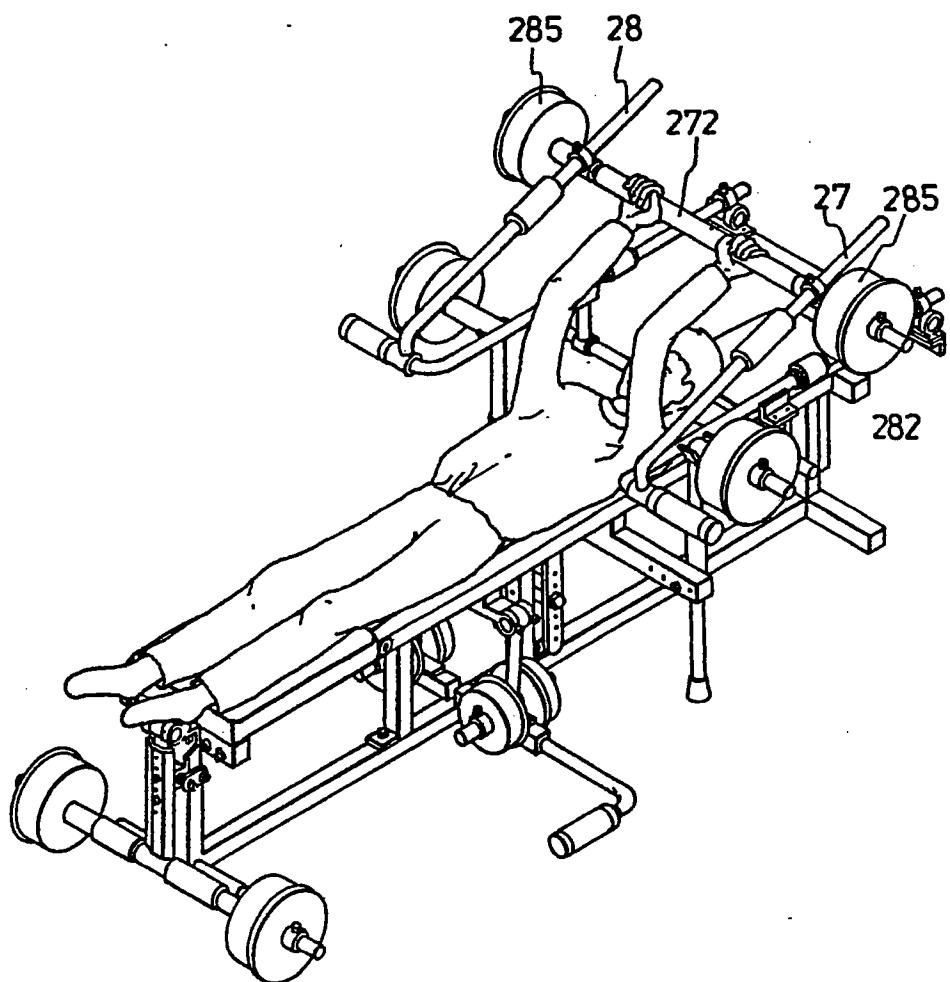


FIG. 23

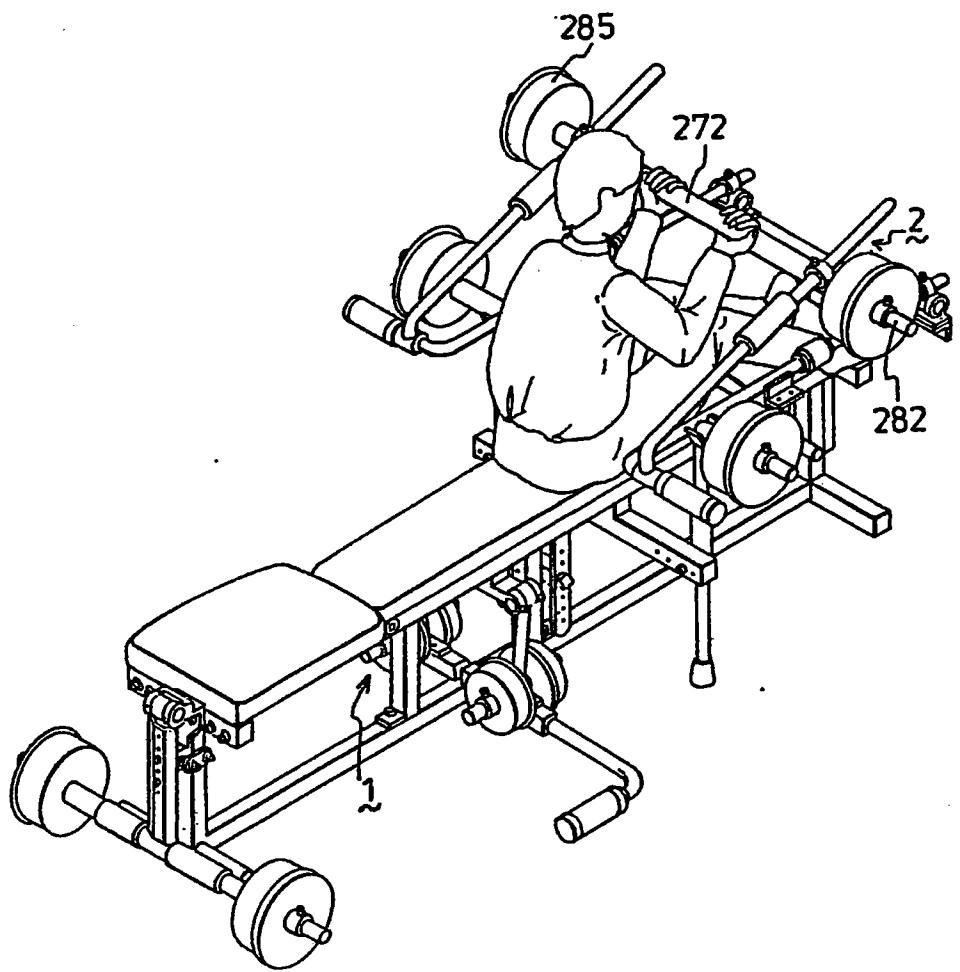


FIG. 24

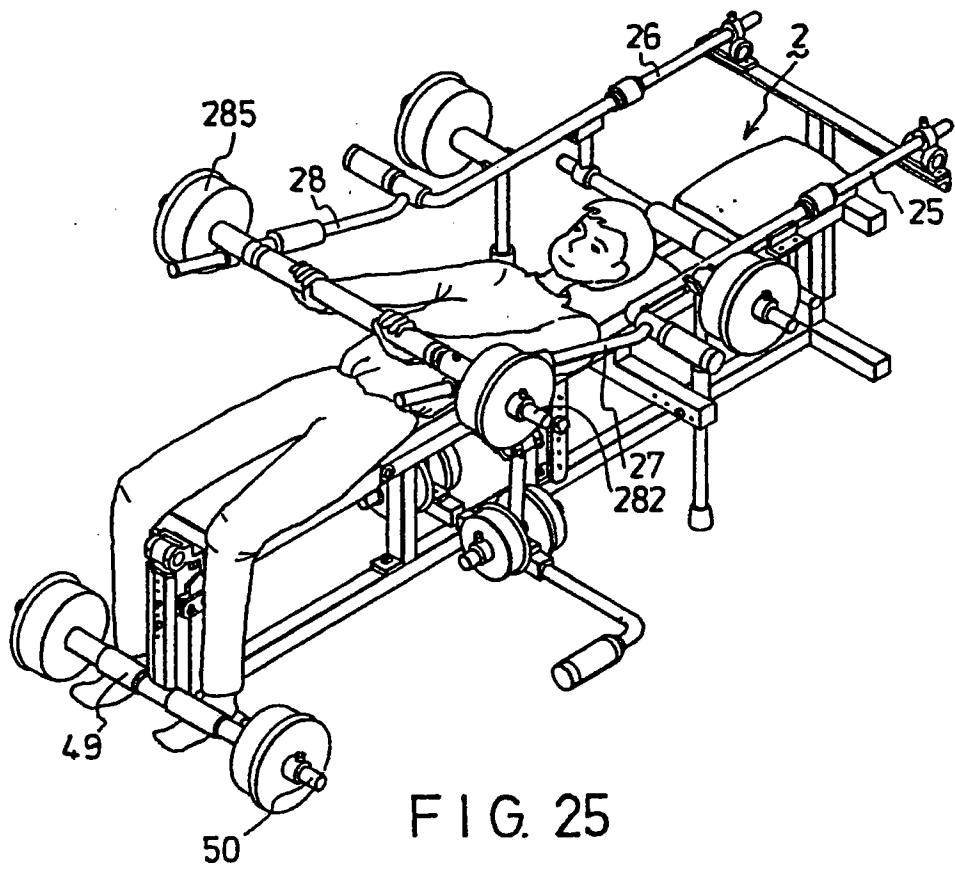


FIG. 25

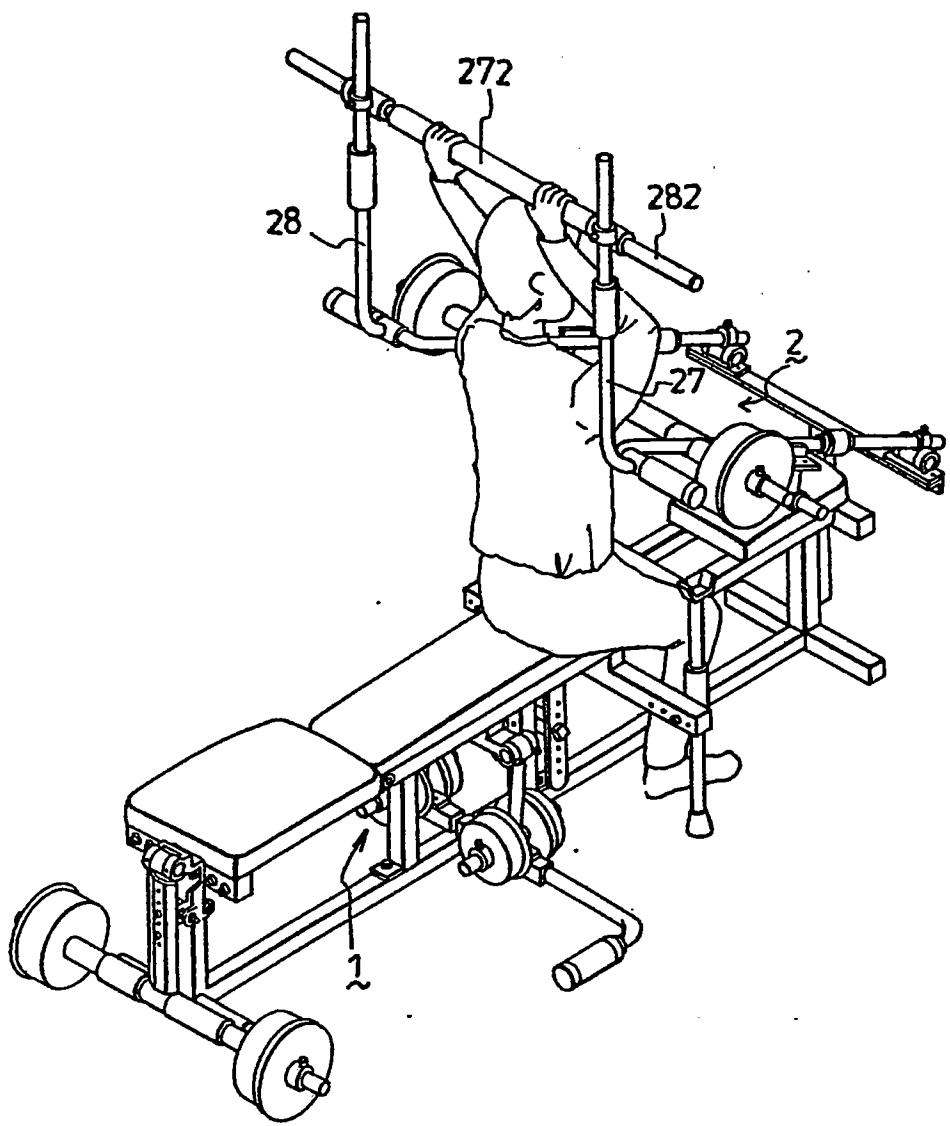
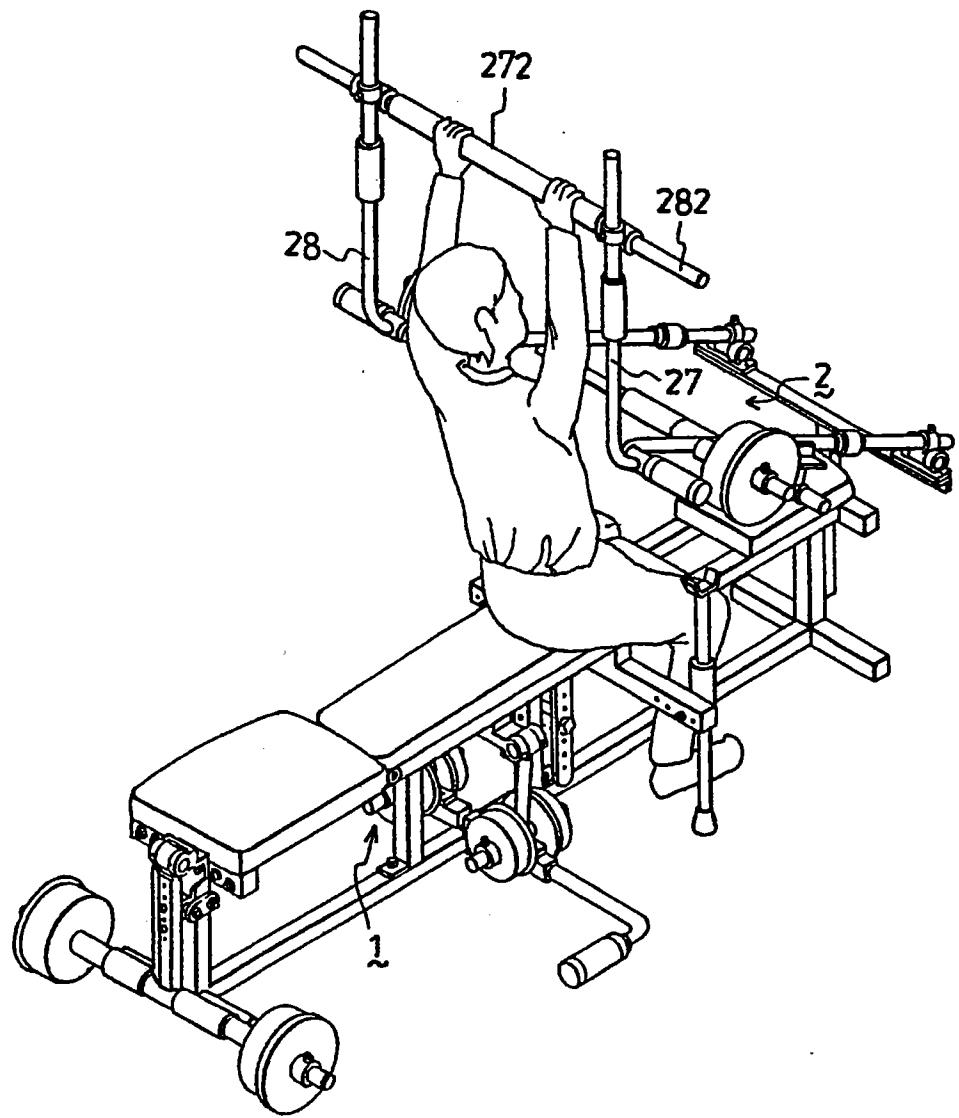


FIG. 26



F I G. 27

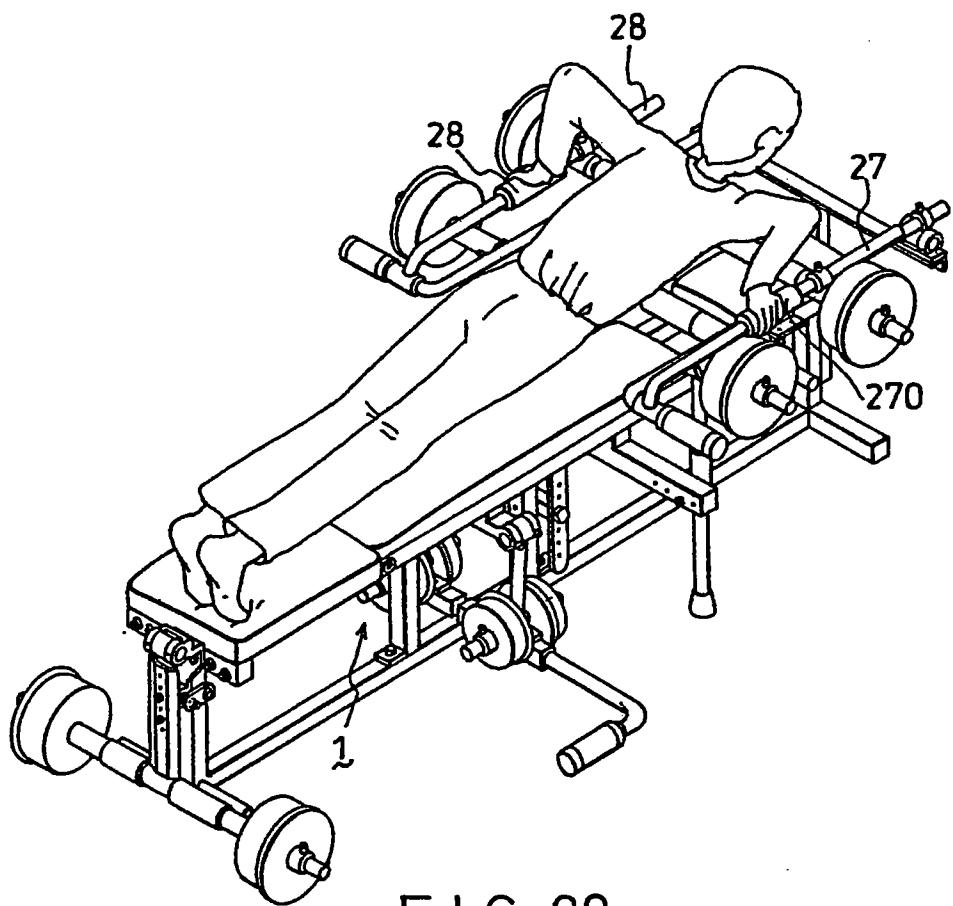


FIG. 28

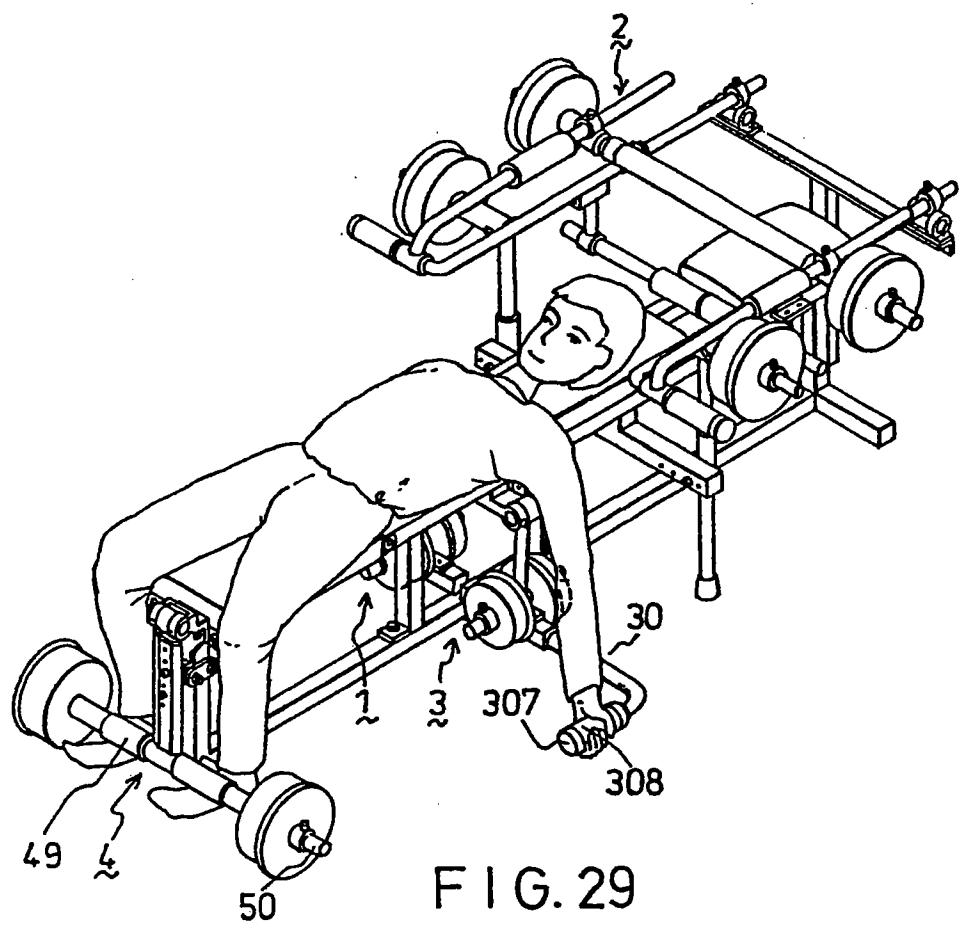


FIG. 29

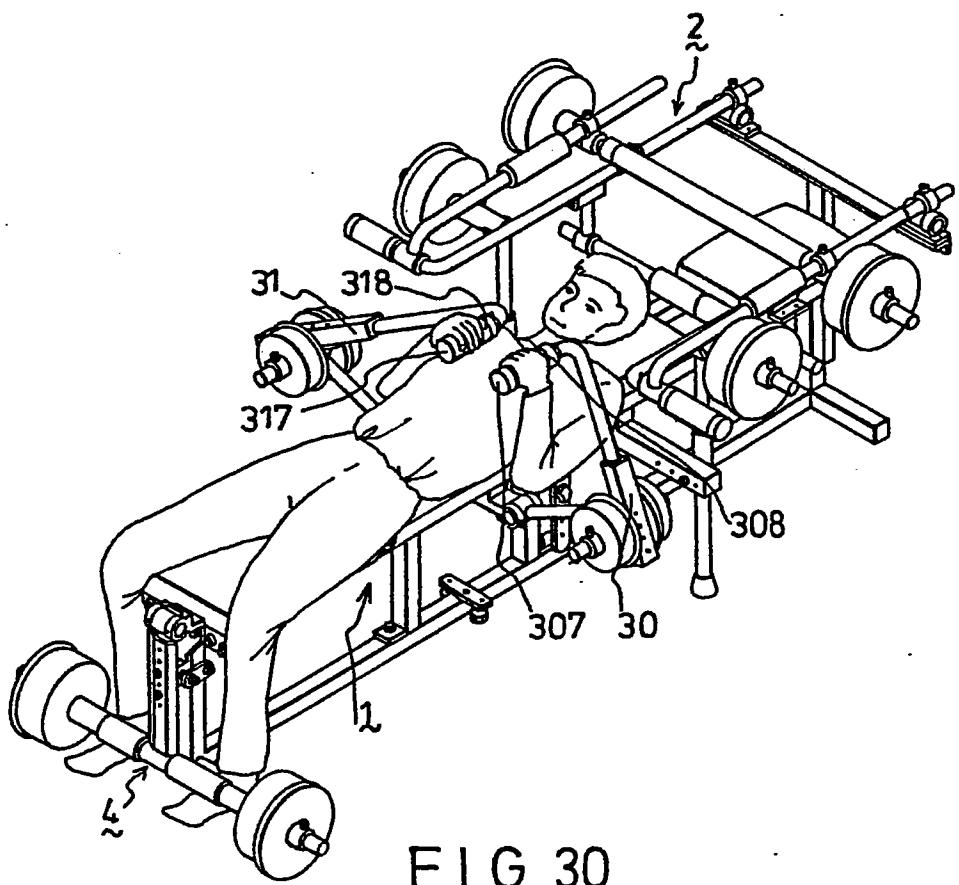


FIG. 30

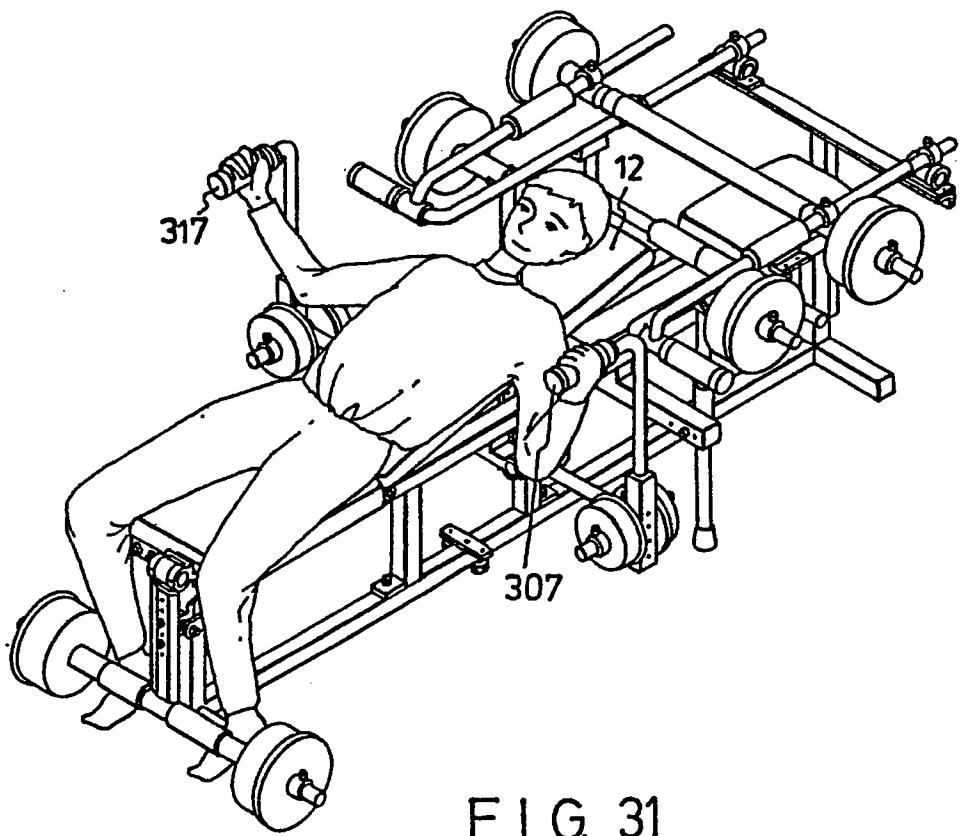
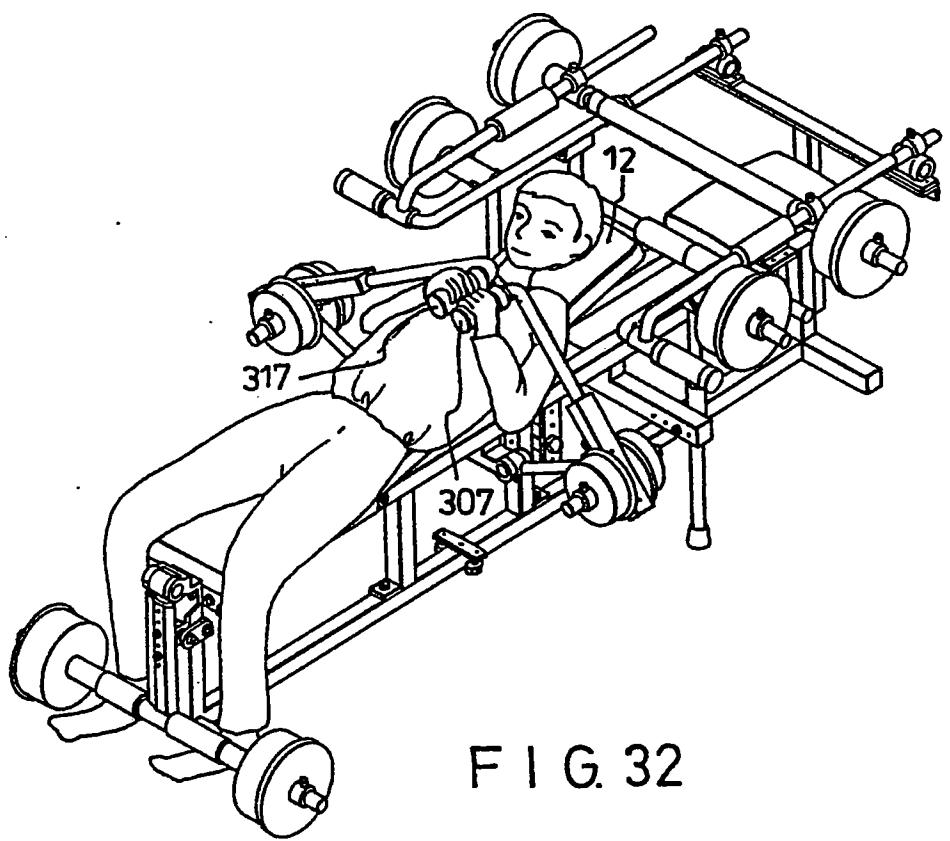


FIG. 31



F I G. 32

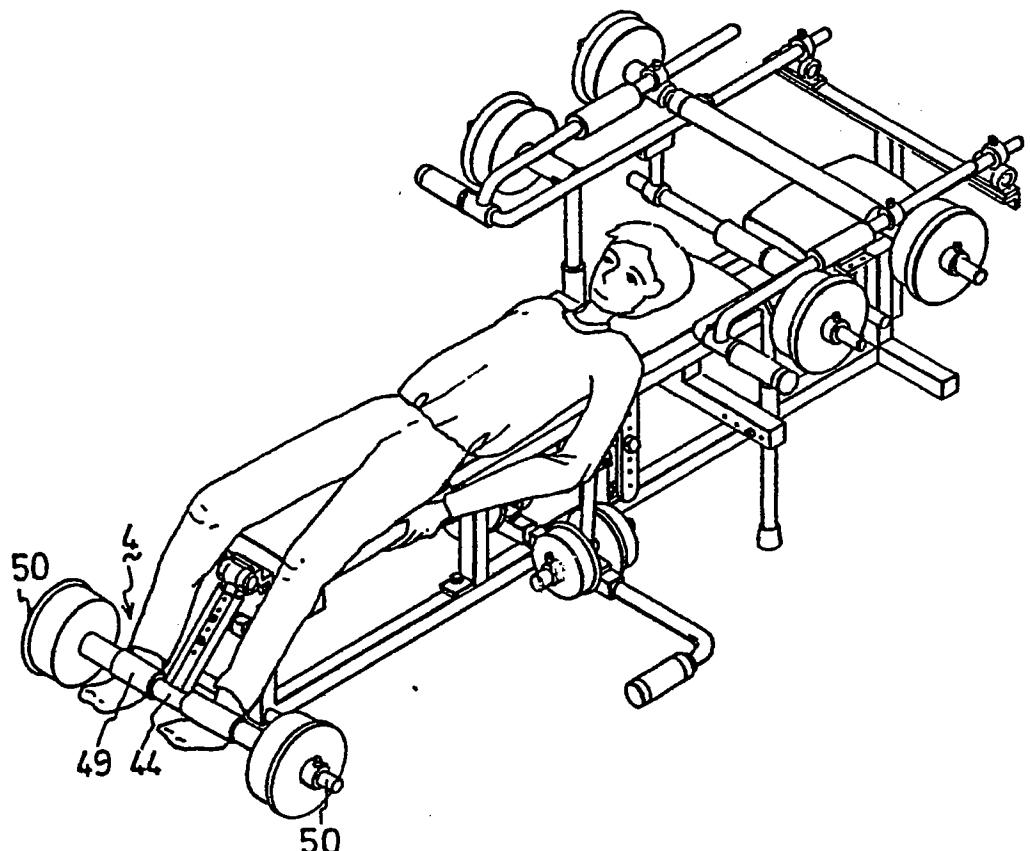


FIG. 33

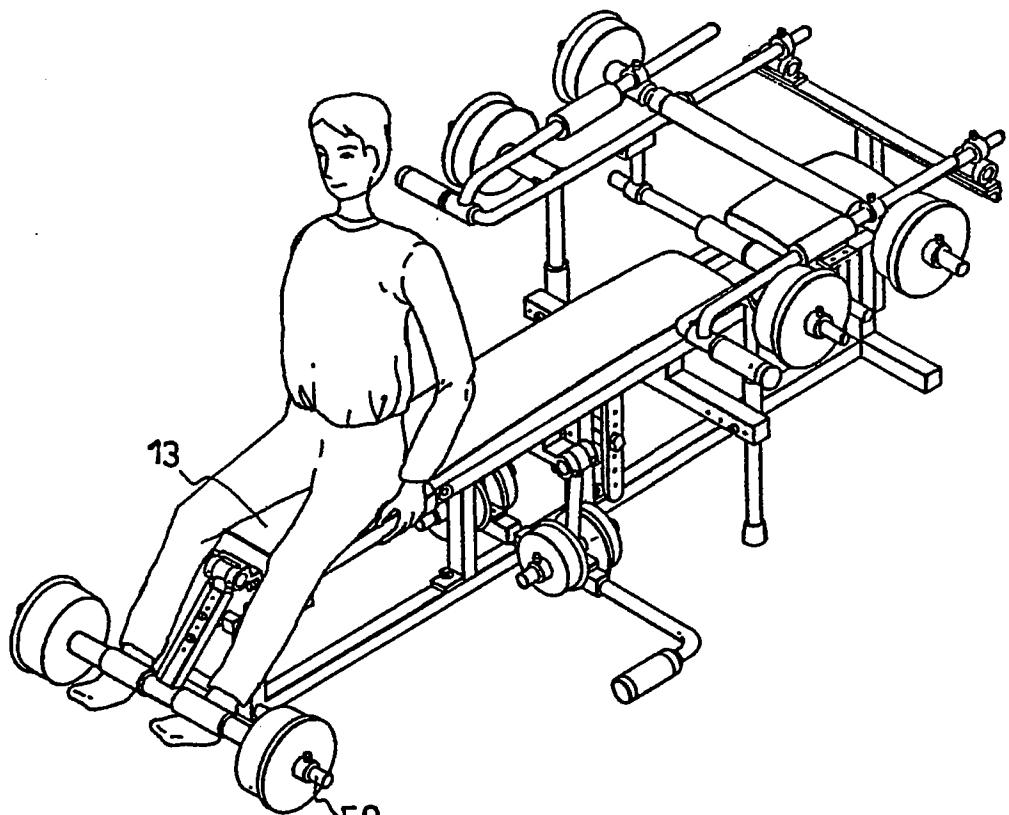
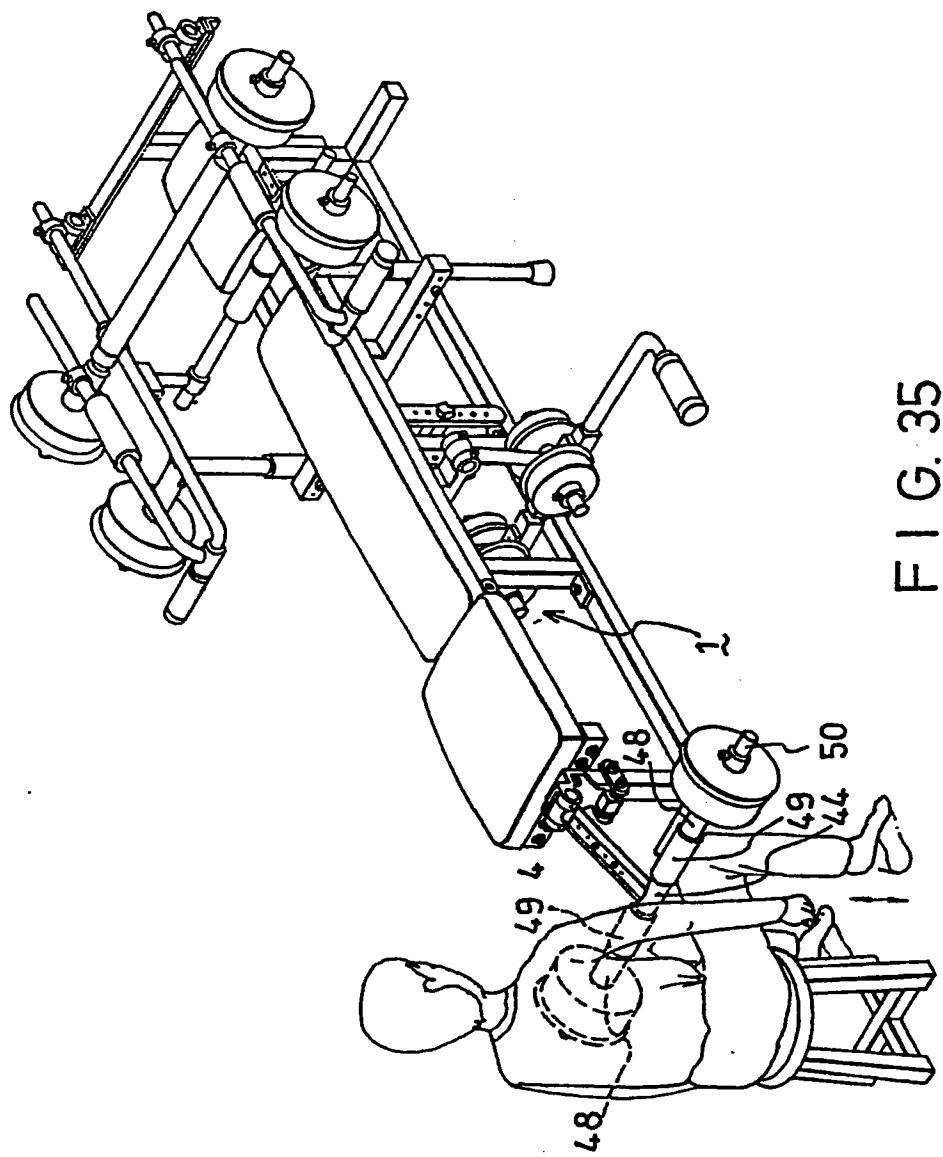
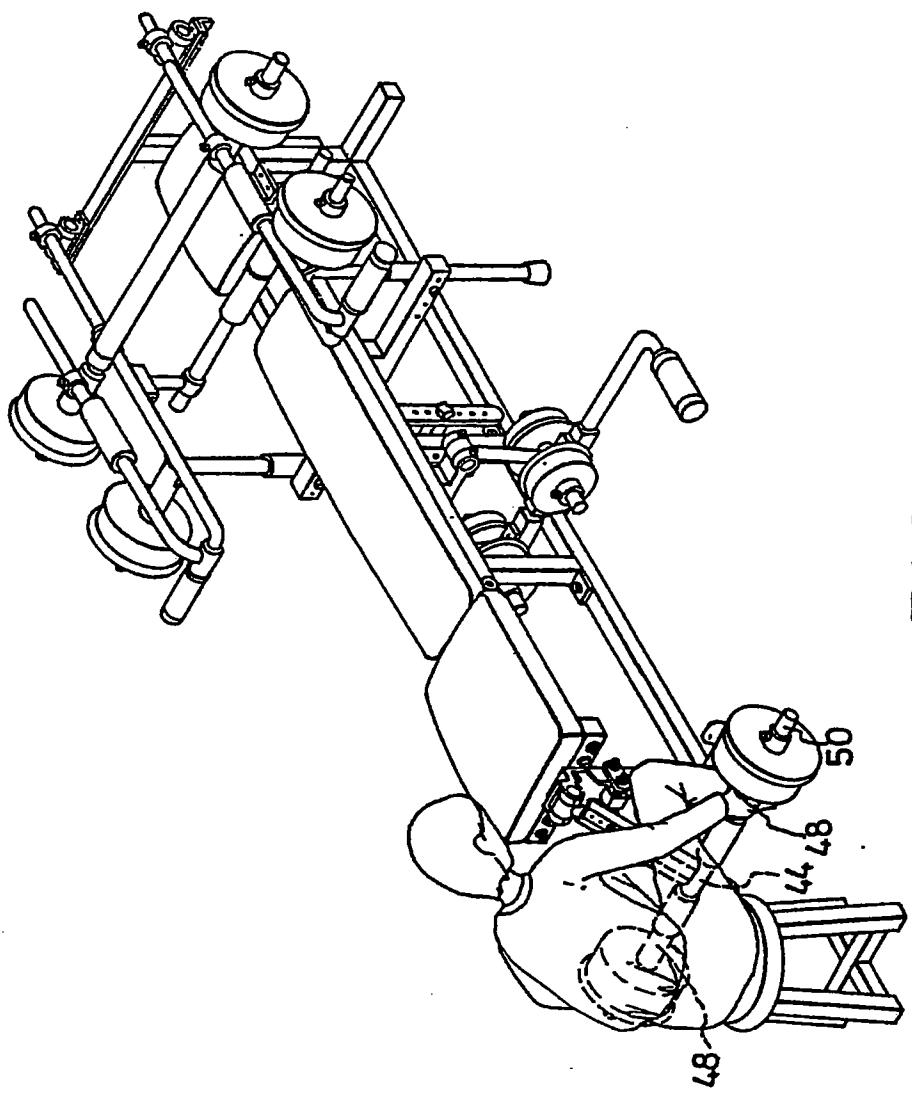


FIG. 34

F I G. 35



F I G. 36



-- 1 --

TITLE: MULTIPURPOSE PHYSICAL CONDITIONING APPARATUS

This invention relates to a physical conditioning apparatus, and more particularly to a multipurpose physical conditioning apparatus having sitting and lying means and a plurality of muscle exercising mechanisms combined for providing various muscle exercises for the entire body of a user.

With the rapid development of industry, the arduous business life which accompanies such a rapid development makes the lives of workers very stressful and leaves them little time to care for their physical health. Moreover, since most big cities are crowded, very few recreational fields are available for those workers who wish to relax from the stress of their work day and improve their physical health.

In order to meet the requirements of good physical health, various physical exercisers, such as treadmills, leg muscle exercisers, etc., have been produced for use in a limited space by those who wish to improve their physical health but have hectic schedules and thus desire to work at home, office or gym. However, conventional physical exercisers are usually confined to their respective usages. For example, a treadmill can only exercise a user's feet and legs. Therefore, the local exercise taken by a user on a conventional physical exerciser is not conducive to the improvement of the

physical health of the user's entire body.

In view of the fact that recreational fields in a crowded city are scarce, various gyms and health clubs have been established to enable people to enjoy a mere comprehensive exercise program. However, in the limited space of a gymnasium, the amount of exercising equipment is usually also limited, therefore possibly inconveniencing the users by requiring them to wait a tended period of time between exercise shifts under crowded conditions.

In addition, ordinary conventional exercising equipment is not ensured to operate safely. Therefore, once an injury is sustained while using said equipment, the user thereof would be afraid of continuing use of said equipment.

It is accordingly a primary object of the present invention to provide a multipurpose physical conditioning apparatus with sitting and lying means for performing physical exercises in various positions.

It is another object of the present invention to provide a multipurpose physical conditioning apparatus with a plurality of muscle exercising mechanisms so as to enable a user to do various muscle exercises to improve the physical health of his/her entire body.

It is a further object of the present invention to provide a multipurpose physical conditioning apparatus which is suitable for the physical conditions of all users

and which is also reliable for safe operations.

It is still a further object of the present invention to provide a multipurpose physical conditioning apparatus adapted for indoor exercises.

5 These and other objects of the present invention are achieved by the provision of a multipurpose physical conditioning apparatus which comprises a combination of: a sitting and lying means adapted to be stably positioned on the floor for performing physical exercises in various
10 positions; a first muscle-exercising mechanism composed of a plurality of first operating members and weight pieces pivotally disposed on a front portion of said sitting and lying means for being alternatively used to do various arm exercises; a second muscle-exercising mechanism composed
15 of a second pair of operating members and weight pieces pivotally installed on the opposing sides of said sitting and lying means for taking balanced exercises therewith; and a third muscle-exercising mechanism composed of a mounting mechanism and a third operating member pivotally
20 arranged at a rear end of said sitting and lying means for doing various back and leg exercises; whereby, a user can do various muscle exercises in different positions for the improvement of the physical health of his/her entire body with great comfort and security.

25 Other advantages and important features of the present invention will become apparent from the following detailed description of a preferred embodiment of a multipurpose

physical conditioning apparatus when read in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective view of a preferred embodiment of a multipurpose physical conditioning apparatus according to the present invention;

Figure 2 is a schematic and side view of a sitting and lying means of the preferred embodiment shown in Fig. 1;

Figure 3 is a partial sectional view of the sitting and lying means taken from Line A-A' of Fig. 1;

Figure 4 is a perspective view indicating a T-shaped anchoring member of a first muscle-exercising mechanism of the preferred embodiment shown in Fig. 1;

Figure 5 is an exploded and perspective view of a rotating-shaft sleeve and a cross joint of the preferred embodiment shown in Fig. 1;

Figure 6 is a perspective view of a first muscle-exercising mechanism of the preferred embodiment shown in Fig. 1;

Figure 7 is an exploded and perspective view of a second muscle-exercising mechanism of the preferred embodiment shown in Fig. 1;

Figure 8 is a perspective view of the assembled second muscle-exercising mechanism shown in Fig. 7;

Figure 9 is an operational illustration of the second muscle-exercising mechanism shown in Fig 8;

Figure 10 is a perspective view of a fixed mount and a linking rod of a third muscle-exercising mechanism of the

preferred embodiment shown in Fig. 1;

Figure 11 is plan view of the fixed mount of the third muscle-exercising mechanism shown in Fig. 10;

5 Figure 12 is a perspective view of a connecting rod disposed in the third muscle-exercising mechanism shown in Fig. 10;

Figure 13 is a schematic illustration of a weight means anchoring sleeve of the preferred embodiment shown in Fig. 1;

10 Figure 14 is a perspective view of the third muscle-exercising mechanism of the preferred embodiment shown in Fig. 1;

Figures 15-36 are various operational illustrations of the preferred embodiment according to the present 15 invention;

Referring to Fig. 1, the preferred embodiment of a multipurpose physical conditioning apparatus according to the present invention comprises a combination of a sitting and lying means 1, a first muscle exercising mechanism 2 provided at a front portion of said sitting and lying means 1, a second muscle exercising mechanism 3 disposed at a middle portion of said sitting and lying means 1, and a third exercising mechanism 4 installed at a rear portion of said sitting and lying means 1.

25 Referring to Figs. 2 and 3 in connection with Fig. 1, said sitting and lying means 1 includes: a support mechanism 10 which is composed of a front traverse support

member 100, a rear traverse support member 101, and a middle linking bracket 103 longitudinally connected between said two support members 100 and 101 so as to enable the entire support mechanism 10 to be stably positioned on the floor; an upright support frame 102 the lower end of which is longitudinally fastened on top of said middle linking bracket 103, as shown in Fig. 2, and the upper end of which remains free thereat; and a plurality of front, middle and rear matress members 11, 10 12, 13 respectively installed in a straight line on top of said middle linking bracket 103; wherein, said front and rear matress members 11 and 13 are respectively fixed at the front and rear end portions of said middle linking bracket 103 while said middle matress member 12 is movably arranged at the middle portion of said middle linking bracket 103 over the top of said upright support frame 102. As can be seen in Fig. 2, one end of said middle matress member 12 is pivotally connected to said upright support frame 102 through a pivot axle 120 so as to enable said matress member 12 to be turned up and down at one end thereof around said pivot axle 120.

As shown in Fig. 3 with reference to Figs. 1 and 2, an anchoring sleeve 104 is horizontally fastened on said support frame 102 at one side, and a pair of anchoring rods 121, 122 each of which has a plurality of anchoring holes 105 vertically formed therein are symmetrically pivoted at one end on a front portion of said middle

matress member 12 with a certain distance defined between said anchoring rods 121, 122 which is slightly larger than the length of said anchoring sleeve 104. Whereby, when the front portion of said middle matress member 12 is lifted up together with said anchoring rods 121, 122, a screw bolt 123 can be inserted into said anchoring sleeve 104 through the aligned anchoring holes 105 of said anchoring rods 121, 122 so that said middle matress member 12 can be held at the desired height during exercise.

Referring to Figs. 4, 5 and 6 in connection with Fig. 1, the first muscle exercising mechanism 2 includes: a T-shaped anchoring frame 20 having a plurality of anchoring holes 200 provided in a vertical portion thereof detachably fixed on a front end of said support mechanism 10 through screw bolts 201 by which the height of said T-shaped anchoring frame 20 can be adjusted as desired during exercise; a pair of open sleeve members 21, 22 separately fastened at opposing ends of a horizontal portion of said T-shaped anchoring frame 20; a pair of cross joints 23, 24 respectively pivoted on each of said open sleeve members 21, 22 through a pair of pivot bolts 232, 242; a pair of first operating bars 25, 26, as shown in Figs. 4 and 6, respectively connected at a front end thereof with said cross joints 23, 24; and a pair of second operating bars 27, 28 separately pivoted on said first operating bars 25, 26 at a rear end thereof.

As shown in Fig. 5 with reference to Fig. 4, each of

said open sleeve members 21, 22 includes a pair of separate sleeves 210, 211, (the separate sleeves 220, 221 of said open sleeve member 22 not being illustrated because the structures of open sleeve member 21, 22 are identical), which are situated at a proper place on the horizontal portion of said T-shaped anchoring frame 20 with an open section D1 defined therebetween, and each separate sleeve 210, 211 has an axial opening 212, 213 which is aligned with those of other sleeves thereat.

10 Each of said cross joints 23, 24 includes a horizontal sleeve 230, 240 and a longitudinal sleeve 231, 241 which is fixed on top of said horizontal sleeve 230, 240, (wherein cross joint 24 is not separately illustrated because its structure is the same as that of the cross joint 23), said horizontal sleeves 230, 240, each having an axial opening identical to the axial openings 212, 213 of said separate sleeves 210, 211, are pivotally connected to said open sleeve members 21, 22 in the open section D1 thereof through a pivot bolt 232 (242) and then respectively fastened with screw bolts 233.

As shown in Fig. 6 with reference to Figs. 1, 4 and 5, each of said first operating bars 25, 26, which are respectively fixed at one end thereof in the longitudinal sleeves 231, 241 of said cross joints 23 and 24, includes:

25 an outstretched handle 250, 260 located at another end thereof; a pliable cylindrical grip 251, 261 movably disposed around each outstretched handle 250, 260; a pair

of outstretched support brackets 252, 262 separately provided behind said outstretched handles 250, 260; and a traverse rod 263, having a pliable cylindrical pad 253 movably disposed around a middle portion thereof, 5 connected between said first operating bars 25, 26 through a pair of connecting posts 254, 264. In addition, said second operating bars 27, 28, each of which is pivotally connected at one end to the outstretched handles 250, 260 of said first operating bars 25, 26 for being movably 10 operated therewith, includes: a soft pad 270, 280 fixed around each one of said operating bars 27, 28; a horizontal rod 282 fastened between the rear portions of said second operating bars 27, 28 through a pair of cross joints 283; and a soft pad 272 disposed around said 15 horizontal rod 282.

As shown in Fig. 6 with reference to Fig. 1, each end portion of said outstretched support brackets 252, 262 and said horizontal rod 282 is furnished with a proper weight member 285, and the second operating bars 27, 28 are 20 normally folded over the first operating bars 25, 26. Moreover, one end of a support post 282 is fixedly connected to a rear portion of each first operating bar 25, 26 and the other end of said support post 282 vertically extends thereat for being placed on the floor 25 so as to support the first muscle exercising mechanism 2 which is situated in its entirety in front of said sitting and lying means 1.

Referring to Figs. 7 and 8 in connection with Fig. 1, the second muscle-exercising mechanism 2 comprises a first operating device 30 and a second operating device 31, both of which are separately disposed at a center portion .
5 of said sitting and lying means 1 and extending from opposing sides thereof. As shown in Fig. 7, each of said first and second operating devices 30, 31 is composed of an erect connecting member 300 (310) and an operating member 306 (316). The erect connecting member 300 (310)
10 includes an upper sleeve 301 (311), a pair of lower supporting struts 302, 303 (312, 313) symmetrically located in line with the opening direction of said upper sleeve 301 (311), and an anchoring plate 305 (315) provided across the bottom side of said lower supporting
15 struts 302, 303 (312, 313). The operating rod 306 (316) includes a curved handle 307 (317) at one end, a cylindrical soft grip 308 (318) rotatably disposed around said curved handle 307 (317), and a plurality of screw holes 309 (319) provided at another end of said operating
20 rod 306 (316) for making connections with the anchoring plate 305 (315) of said erect connecting member 300 (310), as shown in Fig. 8. (It is to be noted that since the structure of said second exercising device 31 is identical to that of said first operating device 30, only one
25 structural illustration is shown for simplicity.)

Referring to Fig. 9 in connection with Figs. 1 and 7, a horizontal rod 19 is horizontally connected with said

-- 11 --

support mechanism 10 at an upper portion of said upright support frame 102 under the central portion of said middle matress member 12 with a pair of longitudinal turning sleeves 190, 191 separately fastened at each end of said 5 horizontal rod 19. The upper sleeve 301 (311) of said first and second operating devices 30, 31 is pivotally connected to the respective turning sleeves 190, 191 through a pivot bolt (not shown), and a plurality of weight members 192 are separately installed around the 10 lower support struts 302, 303 (312, 313) of each operating device 30, 31. In this way, said first and second operating devices 30, 31 can be moved up and down at opposing sides of said middle matress member 12 during exercise, as shown by the phantom line in Fig. 9,

15 Referring to Figs. 10, 11 and 12 in connection with Fig. 1, said third muscle-exercising mechanism 4 is installed at a rear end of said sitting and lying means 1 through a mounting mechanism 40, which is fixed on said support mechanism 10. As shown in Fig. 11, said mounting 20 mechanism 40 includes: a mounting seat 400 having a plurality of screw holes 401 formed therein for being fastened to said support mechanism 10 by means of screw bolts; a pair of rotating-shaft sleeves 402 separately fixed on a top end of said mounting seat 400; a lower base 25 403 extending longitudinally downward from said mounting seat 400 with a horizontal opening 404 provided therein; a threaded bolt 405 installed in said horizontal opening

404; and a pair of lock pieces 406 matched with a pair of regulating nuts 407 respectively disposed at both ends of said threaded bolt 405. In addition, a first arch-shaped connecting member 41, as shown in Fig. 10, having a sleeve coupler 42 provided at an upper end thereof and a plurality of anchoring holes 43 vertically provided in the center, is pivotally connected to the rotating-shaft sleeves 402 of said mounting seat 40 at the upper end thereof through said sleeve coupler 42 for being operated to make turns thereat with the lower end of said arch-shaped connecting member 41 remaining free thereat.

Referring to Figs. 12 and 14 in connection with Fig. 10, said third muscle-exercising mechanism 4 further comprises: a traverse cylindrical tube 44; a second connecting member 45, which is also arch-shaped to correspond to the form of said first connecting member 41, one end of which is vertically fixed on the center of said traverse cylindrical tube 44 and which is provided with a plurality of anchoring holes 46 located in the central portion thereof in conjunction with the anchoring holes 43 of said first connecting member 41; a third operating bar 50 fixedly disposed in said traverse cylindrical tube 44; and a pair of third weight members 47 separately fixed at both ends of said traverse cylindrical tube 44. In addition, said traverse cylindrical tube 44 is also provided with a pair of soft hand grips 48 rotatably disposed therearound near the third weight members 47 and

a pair of soft pads 49 separately arranged in the middle portion thereof beside said second connecting member 45, which is detachably coupled with said first connecting member 41 by means of screw bolts passed through the 5 anchoring holes 43, 46 which are aligned with each other according to the position desired by the user to operate third muscle-exercising mechanism 4. (It shall be appreciated that the arch formation of both connecting members 41, 45 is designed to ensure the firm coupling of 10 both of said connecting members without the risk of loosening occurring thereat.

As shown in Figs. 11 and 14, during assembly of the third muscle-exercising mechanism 4, if the third operating bar 50 is discovered to be unbalanced, the 15 regulating nuts 407 disposed around the threaded bolt 405 of said mounting seat 400 merely need to be adjusted until said operating rod 50 is held in balance thereat.

Referring to Fig. 13, as described and illustrated hereinbefore, the preferred embodiment according to the 20 present invention is provided with a plurality of weight members W1 for being used to do muscle exercises. In order to prevent all of said weight members W1 from sliding off during exercise, each weight member W1 is provided with a sleeve barrel 87 at the outer side 25 thereof, and each sleeve barrel 87 is provided with a through screw hole 85 to enable said sleeve barrels to be fastened onto each related operating bar R1 by a screw

bolt 88 so that the security of each weight member W1 can be ensured during exercise.

The assembly of the preferred embodiment is as shown in Fig. 1 by which various muscle exercises for a user's entire body can be done as illustrated in Figs. 15 through 36.

As shown in Fig. 15, a user can lie in a supine position on the sitting and lying means 1 with his/her feet placed under the soft pad 272 of said horizontal rod 282 to perform sit-ups to condition his/her abdominal muscle.

As shown in Fig. 16, a user can sit straddling the sitting and lying means 1 with both of his/her hands respectively gripping the soft pads 270, 280 on the second operating bars 27, 28 of said first muscle exercising mechanism 2 to perform a push-pull exercise for his/her upper arm muscle.

Referring to Fig. 17, sitting straddling the sitting and lying means 1, the user can grip the soft pad 272 and move said horizontal rod 282 up and down so as to perform an exercise for his/her wrist muscles.

Referring to Fig. 18, the user can inversely grip the soft pad 272 and lift said horizontal rod 282 up and down for exercising his/her muscles of the hand and forearm.

Referring to Figs. 19 and 20, the user sits straddling said sitting and lying means 1 with both of his/her hands grasping the cylindrical grips 251, 261 of the two

-- 15 --

outstretched handles 250, 260 so as to lift said first muscle exercising mechanism 2 up, as shown in Fig. 20, and lower the same down so as to perform a military press to strengthen the muscles of his/her entire arms and wrists.

5 It shall be appreciated that the user can also inversely grasp the cylindrical grips 251 and 261 to perform the same exercise and attain the same muscle conditioning effect.

As shown in Fig. 21, the user can lie in a supine position on the middle and rear matress members 12, 13 with both of his/her hands outwardly grasping said cylindrical handles 250, 260 and the back of his/her feet placed under the soft pads 49 of the third operating bar 50 of said third muscle exercising mechanism 4 so as to 15 perform a bench press exercise thereby exercising the muscles of his/her shoulder and arms.

As shown in Fig. 22, the front end of said matress member 12 can be adjusted to raise up to a desired height for enabling the user to do the same exercise as that 20 shown in Fig. 21, but with greater resistance.

Referring to Fig. 23, the user can lie in a supine position on said sitting and lying means 1 with his/her head and chest portions situated between the second operating bars 27, 28 of said first muscle exercising mechanism 2 and both hands outwardly grasping the soft pad 272 of said horizontal rod 282 so as to move the weight members 285 up and down to exercise the muscles of his/her

forearms and wrists. However, if the user just wants to exercise his/her muscles of the hand and forearm, the user can grip the soft pad 272 only with the fingers of both hands and move the weight member 285 to the proper height 5 for achieving the desired hand and forearm exercising effect.

Referring to Fig. 24, the user can sit at a front portion of said middle matress member 12 with his/her feet positioned at the front end of said first muscle 10 exercising mechanism 2, his/her knees bent toward his/her chest and both hands grasping the soft pad 272 of 'said horizontal rod 282 so as to move the weight member 285 up and down at a desired height to exercise his/her wrist muscle.

15 Referring to Fig. 25, the user can lie in a supine position on said middle and rear matress member 12 and 13 with the second operating bars 27, 28 of said first muscle-exercising mechanism 2 movably stretched to the rear end thereof over his/her upper body portion, and grip 20 the soft pad 272 of the horizontal rod 282 so as to move the weight members up and down over his/her abdominal portion to exercise the muscles of his/her chest, back and arms.

25 Referring to Fig. 26, the user can sit straddling the front portion of said middle matress member 12 with both hands grasping the soft pad 270 of the horizontal rod 282 of said first muscle exercising mechanism 2 so as to move

the second operating bars 27, 28 up and down in front of his/herself to exercise the muscles of his/her wrists and arms. In performing this exercise, the user may take off or add weight members (285) from both ends of said 5 horizontal rod 282, depending on the requirements of the user's physical condition.

As shown in Fig. 27, the exercise described in the preceding paragraph with reference to Fig. 26 can also be performed by moving the second operating bars 27, 28 of 10 said first muscle exercising mechanism 2 up and down over the user's head to exercise the muscles of the user's hands and arms.

Referring to Fig. 28, the user can perform press-ups on said sitting and lying means 1 with both hands grasping 15 the soft pads 270, 280 of said second operating bars 27, 28 thereby exercising his/her arm and abdomen muscles.

Referring to Figs. 29 and 30, the user can lie in a supine position with his/her head lying on the upper end 20 of said middle matress member 12, his/her feet under the soft pads 49 of said third operating bar 50, and both hands respectively grasping the soft grips 308, 318 of said curved handles 307, 308 so as to move said first and second operating devices 30, 31 up and down at the opposing sides of the user's chest to perform chest 25 expanding and arm muscle exercises.

Referring to Figs. 31 and 32, the user can lift up the front end of said middle matress member 12 and anchor it

at a proper height. Therefore, the user can perform other chest expanding exercises as described in the preceding paragraph with reference to Figs. 29, 30.

Referring to Fig. 33, the user can lie in a upine position with his/her head on the upper end of said middle mattress member 12 and his/her feet under the soft pads 49 of the third operating bar 50 of said third muscle exercising mechanism 4, and then, lift and lower said third operating bar 50 with both of his/her feet to a height which is proper to exercise the user's thigh muscles.

As shown in Fig. 34, the user can sit on said rear mattress member 13 to perform the same exercise as that described in the preceding paragraph with reference to Fig. 33 to attain the same physical conditioning effect.

Referring to Fig. 35, the user can sit on a stool facing the rear end of said sitting and lying means 1 and put the third operating bar 50 of said third muscle-exercising mechanism 4 on both of his/her thighs, (to ensure safety, the soft pads 49 of said third operating bar 50 must be placed on both of the user's thighs), and then, lift and lower his/her heels (as the arrowheads show on the drawing) against said third operating bar 50 so as to exercise the muscle of both of the user's legs.

Referring to Fig. 36, the user can sit on a stool in front of said third muscle exercising mechanism 4 with his/her back bending forward and both hands grasping the

soft hand grips 48, which are rotatably disposed on the traverse cylindrical tube 44 of said third operating bar 50, so as to swing to and fro mimicking the actions of rowing a boat to exercise the user's back muscles.

5 As described and shown in the above examples, the preferred embodiment of this invention can be used to perform various muscle exercises to improve the physical health of a user's entire body. In addition, all the rod elements which may come into contact with a user's body
10 are provided with soft pads and pliable rotary grips so as to ensure protection against possible injury during exercise. Furthermore, the entire structure of the preferred embodiment is compact and can be placed in a small room of a house for convenient use.

15 The foregoing is considered as illustrative only of the principles of the present invention. Furthermore, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired that the present invention be limited to the exact construction
20 and operation shown and described, and accordingly, all suitable modifications and equivalents, which may be resorted to, fall within the scope of the present invention as defined in the apending claims.

CLAIMS:

1. A multipurpose physical conditioning apparatus characterized by a combination of:

a sitting and lying means composed of a support mechanism and a plurality of matress members combined for providing support to a user when he/she is sitting or lying thereon;

5 a first muscle-exercising means connected to said sitting and lying means at a front portion thereof, having a plurality of exercising members combined for performing various exercises therewith;

10 a second muscle-exercising means operatively installed at opposing sides of said sitting and lying means for providing symmetrical motions for exercise purpose therewith; and

15 a third muscle-exercising means pivotally connected to said sitting and lying means at a rear end thereof for being used by either the user's hands or feet to perform exercises therewith;

20 whereby, various muscle exercises can be performed in different positions to improve the physical health of a user's entire body.

25 2. A multipurpose physical conditioning apparatus according to Claim 1 wherein said sitting and lying means comprises:

a support mechanism composed of a front traverse support member, a rear traverse support member, and a

middle linking bracket longitudinally connected between said front and rear traverse support members for enabling said support mechanism to be stably positioned on the floor therewith;

5 an upright support frame having a lower end thereof longitudinally fastened on said middle linking bracket and an upper end thereof remaining free thereat for providing operational support therewith; and

10 a plurality of matress members respectively installed in a straight line on top of said upright support frame for being used to sit and lie by a user during exercises.

15 3. A multipurpose physical conditioning apparatus according to Claim 2 wherein said matress members comprise:

a front matress member fixed on a front portion of said middle linking bracket;

20 a middle matress member adjustably installed on a middle portion of said middle linking bracket through said upright support frame; and

a rear matress member fixed at a rear portion of said middle linking racket.

25 4. A multipurpose physical conditioning apparatus according to Claim 3 wherein said middle matress member further comprises:

an anchoring sleeve horizontally fastened on said upright support frame; and

a pair of anchoring rods each having a plurality of anchoring holes vertically provided therein pivotally connected at each upper end thereof to a front portion of said middle matress member in conjunction with said anchoring sleeve so that said anchoring rods can be
5 detachably connected to said anchoring sleeve with a screw bolt which is passed through one of said anchoring holes according to the desired height required by a user for said middle matress member during exercise.

5. A multipurpose physical conditioning apparatus
10 according to Claim 1 wherein said first muscle exercising means comprises:

a T-shaped anchoring frame having a plurality of anchoring openings formed in a vertical portion thereof detachably fixed on a front end of said support mechanism
15 for making height adjustment on said T-shaped anchoring frame;

a plurality of connecting means respectively fixed on a horizontal portion of said T-shaped anchoring frame for making horizontal and longitudinal connections
20 therewith; and

a plurality of operating means pivotally coupled with said connecting means for being movably operated to perform various muscle exercises therewith.

6. A multipurpose physical conditioning apparatus
25 according to Claim 5 wherein said connecting means comprises:

a pair of open sleeve members separately fastened on opposing top ends of the horizontal portion of said T-shaped anchoring frame with an open section defined between each of said two sleeves; and

5 a pair of cross joints each of which is composed of a horizontal sleeve and a longitudinal sleeve being pivotally connected with said open sleeve members in said open sections through a pivot bolt disposed in said open sleeve members so that pivotal turns can be conveniently
10 made therewith.

7. A multipurpose physical conditioning apparatus according to Claim 5 wherein said plurality of operating means comprise:

15 a pair of first operating bars each having an outstretched handle at one end thereof respectively connected to the longitudinal sleeves of said cross joints at another end thereof;

20 a pair of outstretched support bracket separately provided at a rear portion of said operating bars in front of said outstretched handles;

a traverse rod having a pliable cylindrical pad movably disposed around a middle portion thereof and fixed between a front portion of said first operating bars;

25 a pair of second operating bars pivotally connected to the outstretched handles of said first operating bars for being operated to extend and fold against said first operating bars; and

a horizontal rod having a soft pad disposed around
a middle portion thereof fixed between a rear portion of
said second operating bars so that said first and second
operating bars can be moved by a user's hands in
5 performing muscle exercises.

8. A multipurpose physical conditioning apparatus
according to Claim 7 wherein said first operating bars
further comprise:

a plurality of weight members separately installed
10 both at the outstretched support brackets of said first
operating bars and at each end of said horizontal rod of
said second operating bars for being moved up and down
during exercises; and

a pair of pliable and cylindrical grips rotatably
15 disposed around each one of said outstretched handles of
said first operating bars for facilitating exercising
operations therewith.

9. A multipurpose physical conditioning apparatus
according to Claim 1 wherein said second exercising means
20 comprises:

a horizontal rod with a longitudinal turning
sleeve fixed at each end thereof horizontally installed on
top of said upright support frame under a central portion
of said middle matress member; and

25 a plurality of operating devices separately
pivoted on longitudinal turning sleeves of said horizontal
rod at opposing sides of said middle matress member so as

to be operated to move up and down by a user's hands during exercise.

10. A multipurpose physical conditioning apparatus according to Claim 9 wherein said plurality of operating devices comprise:

a first operating device and a second operating device each one of which is composed of an erect connecting member and an operating member, each of said erect connecting member including: an upper sleeve provided on a top end thereof for being pivotally connected to the longitudinal turning sleeves of said horizontal rod; a pair of support struts symmetrically located at a lower portion thereof in line with the open direction of said upper sleeve; and an anchoring plate provided across a bottom side of said support struts; each operating member including a curved handle at one end with a cylindrical soft grip rotatably disposed therearound and a plurality of anchoring openings located at another end thereof which is fastened on the anchoring plate of said erect connecting member through a plurality of screw bolts; and a plurality of weight members positioned respectively at the support struts of said erect connecting members of said first and second operating devices for taking exercises therewith.

25 11. A multipurpose physical conditioning apparatus according to Claim 1 wherein said third exercising means comprises:

a mounting means installed at a rear end of said sitting and lying means for making pivotal connections therewith;

5 a first connecting means having an upper end pivotally connected to said mounting means and a lower end extending downward therefrom with a plurality of anchoring holes vertically formed therein for making connections therewith;

10 a traverse cylindrical tube having a pair of soft pad provided around a middle portion thereof;

a pair of soft hand grips rotatably disposed at opposing ends of said soft pads around said traverse cylindrical tube;

15 a third operating member installed in said traverse cylindrical tube, and a plurality of weight members fixed at each end of said third operating member; and

20 a second connecting means formed in conjunction with said first connecting means erectly fixed on the center of said traverse cylindrical tube for being detachably coupled with said first connecting means via screw bolts so as to enable said third operating member to be operated up and down by either a user's hands or feet during exercise.

25 12. A multipurpose physical conditioning apparatus according to Claim 11 wherein said mounting means further comprises: